

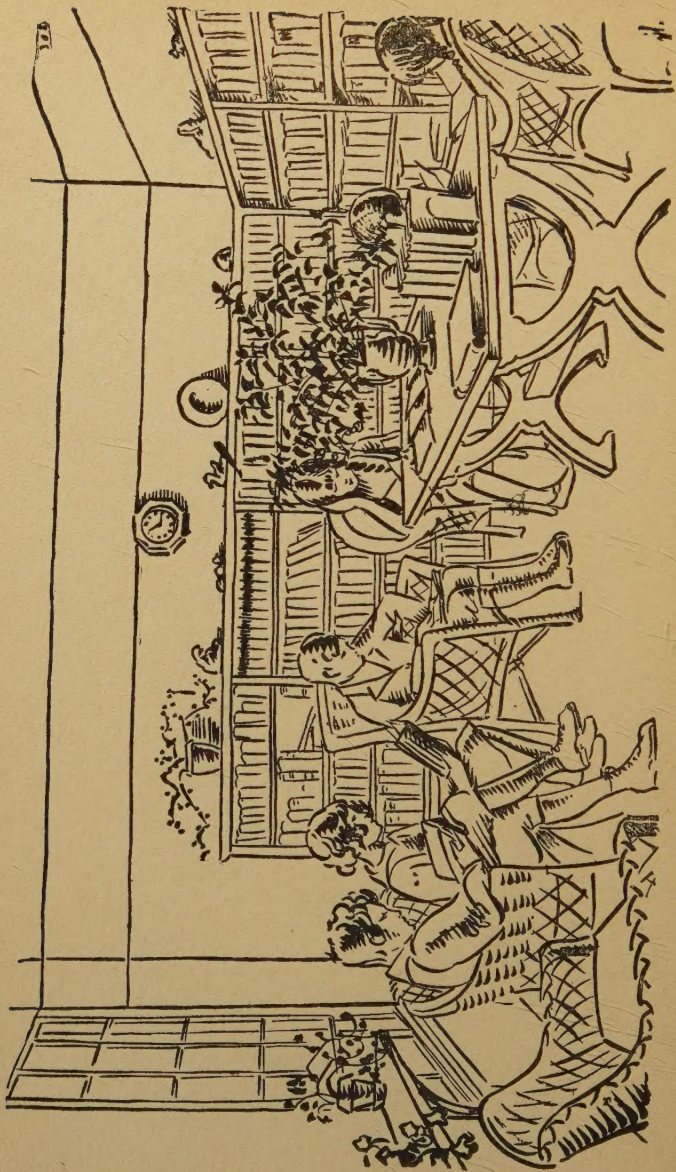
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ADVENTURING WITH
TWELVE YEAR OLDS



EXPERIMENTAL PRACTICE IN THE CITY
and COUNTRY SCHOOL

Edited by CAROLINE PRATT

ADVENTURING WITH
TWELVE YEAR OLDS

BY
LEILA STOTT

Illustrations by Jeanne de Lanux

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PREFACE

In a quiet street of old New York stands The City and Country School, founded thirteen years ago by Caroline Pratt and known during the early years of its history as "The Play School." It has been one of the first among educational pioneers frankly to avow itself experimental, and to attempt a revision of school practice "from the ground up" by discarding, at the beginning of its work, all the traditional preconceptions that govern the standard practice of our schools today. In the course of its development provisions in regard to program, curriculum, and method have been adopted only as they have appeared to be justified by the school's own experience, and the situations arising within its classrooms.

To study the interests and abilities of the growing child as they are manifested, to supply an environment that, step by step shall meet the needs of his development, stimulate his activities, and orient him in his enlarging world, and that shall at the same time afford him effective experience in social living—this in brief has been Miss Pratt's thesis and from it, through successive years of trial and error, she and her co-workers have built up the experimental practice that is pictured in detail by the various school records. Three of these have already been published; Miss Stanton's two records of her four and six-year-old classes which appeared together under the title of *Before Books*, and Miss Lula Wright's record of her

seven-year-old class, under the title of Experimental Practice in the City and Country School. Miss Stott's record of her twelve-year-old class presents the material of this further study.

These school records, written by the classroom teachers from copious daily notes, are in themselves experimental. Their publication invites criticism and suggestions in matters of form as well as of content. Indeed, as Miss Pratt has stated, the purpose of the school in publishing its records is to secure discussion of them, and of the school procedure pictured by them.

To those readers to whom the story of The City and Country School is as yet unknown, the following details will be of interest. Miss Pratt began her experiment in 1913 with a small group of children of pre-school age gathered from various homes in the neighborhood. During the early years of its development the experiment was maintained through the generosity of a few private donors. In the beginning tuition was entirely free, but parents who were interested and able to do so, from time to time contributed to the school funds. Recently, at the request of the parents, tuition fees were adopted, but at the same time it was agreed that a large percentage of scholarship pupils should at all times be enrolled. In this way the school's original purpose, to serve children who would normally be found in the city's public schools, has been preserved, at the same time that its growing reputation has attracted many parents whose children would otherwise have been sent to private schools.

The name first given it, "The Play School," reflects a special interest of the founder, her original inquiry into the educational possibilities of children's play and its place

in school procedure. As the experiment progressed, however, and older classes began to be included, the children protested vigorously against this name, and it was changed to "The City and Country School" at a period when a school vacation farm was maintained as part of the experiment. Though somewhat incongruous today when its application is limited to the city plant, this second name has become so identified with the experiment as to make the wisdom of any further change seem questionable.

In addition to its primary purpose, the development of an experimental practice, The City and Country School has for some years co-operated with the Bureau of Educational Experiments, affording the research staff of that organization opportunities for observations and measurements of normal children who are developing in an environment particularly favorable to health and spontaneity. Results of these studies are published from time to time by the Bureau of Educational Experiments, and there has been no attempt to include them in the following pages. The school and its staff have at all times remained responsible for their own experiment and the scope of the present volume is limited to their specific problems of experimental practice.

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CHAPTER I

EXPLANATORY

In presenting this account of the experience of a group of twelve-year-old children during one year in the City and Country School, perhaps a word of explanation at the start will help to clarify the organization of the school's thought and purpose. All the chapters that follow have been built up out of current notes taken during the year on the actual activities of the children. The school's philosophy is, of course, implicit in them, but some of the particular emphasis of its thinking may be obscured by this grouping under subject matter heads instead of under the general heads in terms of which we ourselves plan our curricula from the youngest groups on, namely; Practical or Play Experiences; Special Training in Techniques; and Organization of Information.

With these older children, as with the littler ones, whose school curriculum consists chiefly in the dramatization of their experiences through play, the central point of all their school life is the opportunity for *real experiences* in work or play or both combined, found by this particular group in such activities as are described in the chapters on The Toy Company, Dramatics, and the various forms of individual expression in Stories, Music, Clay Modeling and Shop Work, and Laboratory Experiments. The en-

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richment of such basic experiences through the building up of related information and skills available for use leads often into the field of so-called academic studies and brings children and teachers alike to the necessity for new methods and sources of research.

Sometimes an interest started in this way is carried on by the children for its own sake, as in the case of the history and theoretical science work described here, the mathematics, and much of the geography and map making which grew out of the search for material to enrich the dramatics. With the twelve-year-old group some interests were even quite definitely carried over from the previous year's experience. In all of this work, however, the teacher is constantly watching for signs that the new information and skills are really functioning in some vital way that eventually becomes articulate in story or art form or technical experiment, just as the new observations of the little children eventually find organized expression in their block building and drawing. Here, too, for the teacher, is the ever present discipline of patience, for, of course, the chance of a spontaneous flowering may be killed by unwise pressure or suggestion.

Perhaps the most typical instance in these notes of the way a curriculum grows under such circumstances may be found in the chapter on Dramatics, especially the description of the initial stages. For this reason, at the risk of some repetition, the current notes have been left untouched in the hope that they might more clearly bring out the day by day development.

Certainly it would be easier to imagine than to describe the constant stimulus and excitement there is to a teacher in keeping abreast of these new and often quite unforeseen

developments of interest even though at times the suddenness of the demands make one feel like crying out with Lincoln, "If we could first know where we are and whither we are tending, we could better judge what to do and how to do it!" Fortunately, in the case of these particular children, indications were not lacking as to where we were, owing to the fact that a few of the group, Bob, Catherine, and Adam, had been in the school since they were four or five years old, and the majority had been with us for the last five years, so that we were all familiar with much of their previous experience. Polly and Paul had been with the group two years, Anne only one, and Mary and George were new the year this record was taken, having come directly from a public school.

Having thus in a way grown up with the school itself, they called themselves the "Pioneer Class" and prided themselves on having been the first group to undertake, at eight years of age, the running of a store to handle school supplies for all the classes; the first group to start the following year a school post office, as well as to establish various other successful precedents, and out of all this common experience they had acquired a strong group spirit and habits of independent organization of work. If it were not so, they could hardly have developed a successful industry of toy making with a teacher like myself utterly inexperienced in carpentry or any form of craft work.

During the past two years these children had carried on a business of doing printing jobs for the school, hand printing for the first year and then printing on a large foot press. In the course of this work they had built up an organization based on the mediæval guild, with appren-

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tices, journeymen, and master printers; had worked out their own standards and tests for these different orders, and as the climax of their work had issued a magazine containing the master-pieces submitted to the class as part of the test for master printers. All but four had reached that rank and all were anxious to begin the year by getting out a new edition of this magazine to fill the unanticipated demand for more copies.

In connection with this printing activity the group had built up also a rich background of mediaeval history and of the beginnings of civilization in Egypt, and had come up through the Renaissance period to the Age of Discovery with a definite desire to go on to a chronological study of American history. In addition to these two special interests which they carried over from the year before, they had expressed a desire the previous spring to have some group industry as they had had each year since they were eight years old. With these few concrete proposals in mind, we started our adventuring.

STAFF

Clay Modeling	Miss Levin
Geography	Mrs. Mitchell
Group Teacher	Miss Stott
Mathematics	Mr. Kusner
Rhythms	Miss Doing
Science	Mr. Paley
Shop	Mr. Reber
Singing	Ratan Devi

SCHOOL PLAN OF CURRICULUM ORGANIZATION

PRACTICAL AND PLAY EXPERIENCES

- (a) The Toy Company
- (b) Dramatics
- (c) Music, Clay Modeling, and Shop Work
- (d) Laboratory Experiments

SPECIAL TRAINING IN TECHNIQUES

- (a) English
- (b) Foreign Languages
- (c) Techniques of Music, Clay Modeling, and Shop Work
- (d) Mathematics

ORGANIZATION OF INFORMATION

- (a) History and Geography
- (b) Theoretical Science
- (c) Mathematics
- (d) Content of Dramatics
- (e) Trips
- (f) Reading
- (g) Original Stories

DAILY SCHEDULE DURING THE EARLY FALL

9-10 Business discussion, followed by history and geography

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10-11:15	Individual work period (toy making, half of the group) 10-10:45 Laboratory 10:45-11:15 German	half of the group
11:15-12:00	Rhythms (Monday and Thursday)	
11:15	English	Tuesday, Wednesday, and Friday
11:40	Yard	
12:00-12:40	Individual reading in library	
12:40-1:00	Lunch	
1:00	Mathematics	
1:40	Music (Tuesday and Friday) French (Monday, Wednesday, and Thursday)	or other individual work
2:30	Yard	
3:00	End of School	

After-school period (optional)

3-3:45	Shop, laboratory, clay modeling, library, toys
3:45-4:30	Yard

LATER SCHEDULE FOLLOWED WITH VARIATIONS MOST OF THE YEAR

9-10 Discussions on history, English, or dramatics (depending on dominant interest at the time.)

10 French or German, followed by formal English work.

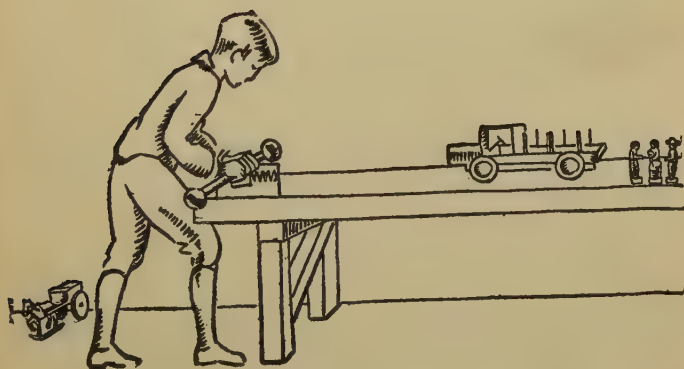
10:40-11 Yard (Tuesday, Wednesday, and Friday)

10:40-11:15 Rhythms (Monday and Thursday)

11 (or 11:15)	12 Mathematics Science	Monday, Wednesday, and Friday, small alternating groups
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Individual work (Tuesday and Thursday)

- 12-1 Lunch, and library for individual reading
1 Reading aloud in group or individual study period.
1:30 Mathematics } Monday, Wednesday, and Friday,
Science } small alternating groups
Individual work (Tuesday and Thursday)
2:30 Yard
3-4:30 After-school period, as above in first schedule.



CHAPTER II

THE TOY COMPANY

When the children gathered on the first day of school they proceeded at once, without suggestion from me, to hold a business meeting as they had been in the habit of doing the year before. After the election of class officers for the week, a chairman, secretary, treasurer, librarian, business manager, and yard committee, the question arose as to what the year's business was to be. Several remembered the decision made the spring before to undertake toy making, but Marshall reopened the question by saying that he thought they ought to put all their time into "study as last year's Twelves did." A chorus of disapproval greeted this suggestion.

Bob who had been elected business manager made an appointment with Miss Pratt to meet with the class and discuss the possibilities of the situation. She began by referring to the company for making toy boats that had been organized by several members of the group last year outside of school and asked why it had not succeeded and whether the members of it felt they needed or wanted any help the school could give. Adam at once brought out the fact that there had been difficulties in organization of the work which they had been unable to meet by themselves and welcomed school assistance.

Miss Pratt then told of her own experience in making

toys to sell and suggested the following as general principles to work by: (1) toys should be related to each other in size and use so that they may form part of a general play scheme; (2) they should be durable; (3) they should be decorative. She suggested choosing some general scheme to begin with, such as a farm or a city, and working out models appropriate to that scheme. She also proposed making these models on a scale adapted to four inch dolls since that had proved a good scale for our own use in the school.

It was evident from the responses and suggestions of the children that the interest was confined to part of the group, so Miss Pratt suggested that only those who wanted to organize a Toy Company go on with it and that the rest pursue their own interests either individually or in a group. Marshall, Leo, Ben, Paul, and George (a new boy that year) withdrew, and Marshall gathered them together to discuss his idea of selling apples in the yard after school as they had done several years before.

Meanwhile the rest decided to work on models for a city play scheme. Polly began by drawing a picture of a whole street scene from which she picked out individual people for models. Miss Pratt recommended this way of working to all the children, but only Ellen did it successfully, and there was little interest in drawing or painting for its own sake. By this time certain types had been decided on as desirable and Catherine undertook to make a policeman, Polly and Bob workmen, Ellen a horse, Adam, Edward, and Anne trucks.

The need for more time in the shop soon became a problem which the shop could not meet. This led to an unused, enclosed porch being turned over to the group to fit up for

the use of the Toy Company. There was an immediate increase of interest, and Adam brought from home an electric lathe which was needed for turning wheels. This set the new shop on its feet and resulted in Ben's joining the Toy Company since he was called on for help in getting the lathe installed.

He proved so efficient that he became shop foreman and undertook the responsibility of getting the new shop furnished. He made a rack for tools and collected from the big school shop as many as could be spared. Adam also proved such an experienced worker that he was made joint foreman with Ben. He put a new iron vise on the work bench in place of the original wooden one, advised the use of a thicker oil for the lathe and went with Paul to a near-by garage to buy the kind needed. Ben had found from previous experience that oil splattered badly from the lathe so put up paper to protect the walls. Catherine covered a long table with oil cloth so that it could be used for painting, and Polly brought from home some oil she recommended for mixing oil paints.

Meanwhile Paul had withdrawn from Marshall's apple selling business when he found that it was a scheme for private profit rather than for the benefit of the group as a whole, and he showed so much interest in the toy work that it was evident that he had held back from joining only because he had felt unable to produce a model. When Miss Pratt proposed his becoming bookkeeper for the business, he accepted his post gladly and at once began helping in the shop on odd jobs.

Ben continued to help in the apple selling out of friendship for Marshall, but the latter lost interest himself after

the first month and wound up the business before Thanksgiving.

Bob and Catherine were the first to present satisfactory models of dolls cut out of wood and painted. They made patterns of their accepted models in stencil paper and gave them to Mr. Reber, the shop teacher, to cut out in quantity on the big band saw. Bob invented the idea of making copper work tools to fit into a hole drilled through the hands of his dolls. He was so busy working on these that he enlisted Paul's help in painting the dolls like the original model. Catherine in the same way turned over her policemen to be painted by any one out of a job, but reserved for herself the painting of a set of "special officers."

Polly worked for a long time on her model as she had an idea of making a workman who showed the effects of hard work. She seemed to want a somewhat brutalized look, but agreed with the rest that her first attempt looked "too tough." Paul said it might do for a longshoreman, but Miss Pratt raised the question whether it was the idea of a workman she wanted to give to a child. Polly said it was not, so tried again. After making several models she finally succeeded in getting two that were satisfactory to herself and to the group. All models were submitted to Miss Pratt for criticism and approval before being finally accepted.

Ellen's horse proved a problem and was made over several times to improve on the proportions and size. She went out into the street to sketch a work horse from life and also consulted various pictures of horses in working out her model. This, too, was finally cut out in quantity

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and painted in various appropriate colors. Adam and Edward produced good wagon trucks, but they were too large for the rest of the scheme. Adam cut his in two to reduce the size and made it into a successful two wheeled dump cart. Edward preferred to make a new model to scale, but Ben took over his abandoned wagon and made it into a good motor truck. When it was finished and painted, he made stencils for cutting out the parts in quantity, marking each stencil carefully with the kind of wood required.

Edward, too, finished a fine truck model beautifully painted, and was completely absorbed in the last stages of the work. He often worked alone in the little shop after school, as did also Marshall, Ben, Leo, Paul, Bob, and Polly. Much of this time was spent in practising on the lathe and turning out wooden candlesticks to take home.

Adam was the first to get his model cut out in quantity, but his first carts were criticised by Miss Pratt and others as not being sufficiently firmly constructed, so he took them apart and adopted the more secure method of putting his wheels on with screws as Ben and Edward had done on their trucks. So much emphasis was put on firm construction that the group adopted the name of Never Bust Toys as their trademark.

Ben and Adam went out by themselves to buy the paints needed. In order to equip the new shop we all took a trip to a hardware store to choose tools. Everyone was interested, but Ben and Adam as shop foremen took the responsibility of deciding on what was needed, and Paul paid the bill out of money carried over in their business treasury from the sale of last year's magazines. After this trip Leo announced that he would like to join the Toy

Company. As Marshall and George had become fascinated by the lathe, and had often helped in the work, I invited them to join, too, and they accepted with alacrity, so the whole class was now included. Marshall soon presented a horse model of his own, but did not succeed in getting it to fit the scale of the cart as well as Ellen's. George worked on a model for a milk wagon, but was dissatisfied with it and instead of finishing it duplicated Ben's successful truck model.

Polly became very much discouraged with her own results in painting and wanted to specialize in designs for others to carry out, but no one else liked this idea. All wanted to work out their own designs, and all but Leo and Paul did have original models. Leo spent most of his time turning wheels on the lathe for Ben's trucks under the latter's direction, and George and Marshall did the same.

Miss Pratt was very critical of all the painting, so we called in the shop teacher for consultation. With his help we worked out a method of dipping for first coats of paint, and made stands for drying. Better care of paints and brushes was found necessary as was also the removal of fine painting operations from the dust and confusion of the shop. Great improvement resulted, and Polly produced the first set of satisfactorily finished dolls and made the first sale to Miss Pratt.

During this first six weeks of school the toy making had been a good deal slowed down by work on a new edition of the magazine issued by the group the spring before. They had so many requests for more copies that they were eager to get out a new issue and arranged with Miss Garrett who was in charge of the printing room to work there in the afternoon when it was not being used by

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Group XI. As Bob and Adam had been unable, because of illness, to take their examinations for Master Printers last spring, they were given an opportunity to do so, and to offer stories as masterpieces to be included in the new issue. To their great joy both succeeded in qualifying.

As Miss Garrett was too busy with her own group to give much help in organizing the work, she proposed that an editor-in-chief be elected to take charge of this. Bob was chosen unanimously. He kept track of the jobs to be done, reporting progress and calling for volunteers at the morning business meeting of the group. The work went on rapidly after he took it in hand. The printing was finally completed early in November and a full morning was given over to the task of assembling the magazine.

Bob organized all the work. He began by announcing that the whole class would not be needed for the job and asked those who really wanted to go to the laboratory as usual to "be honest and say so." With some hesitation Adam, Leo, Marshall, and Edward did admit a preference for the laboratory and were dismissed by Bob. He proceeded to assign jobs to all, including me, and the work was put through with the greatest efficiency. The silence in which we worked was as striking as was the absence of confusion.

Bob reserved for himself the task of sewing the magazine together so that he could give a final check to each copy. Paul helped him and both were so absorbed that they worked right through the noon reading period. They asked if they had to go to mathematics class as usual after lunch. I left it to them to decide, whereupon Bob settled it by taking up his pad and pencil and calling to Paul to "come on and let's go." They returned to the job working

through the yard period and finishing in fine shape with the one hundred fifty magazines counted and stacked away in lots of fifty.

Meanwhile Polly had started a painted poster to advertise the sale of the new magazines, but had drawn no lines for her lettering and produced such a messy piece of work that it was criticised both by Miss Pratt and the class. Several others volunteered to try posters too, so I brought in some samples of good lettering done by Group X, and Catherine, Leo, George, Anne, and Marshall all turned out posters done with the greatest care and interest, and very satisfactory in result. It was the first careful piece of hand-work George had done in the classroom.

Volunteer committees were then organized to sell the magazines in the school, and Bob and Paul were given the honor of serving first in recognition of their work. Marshall and Ben, Leo and Edward, Catherine and Polly were the other couples who served, and the whole issue was sold out in three days. Paul as bookkeeper for the class business balanced his accounts each day and made daily reports to the group. Each sales committee turned in to him its reports and cash and he handled the work accurately without assistance or reminder.

The group had decided last year that they would use half of all their earnings on the magazines to make a gift to the school to go toward paying for the large foot press that had been bought for their use. Accordingly they now asked Paul for a report of the total amount realized from the sale of both editions and finding that this amounted to thirty-two dollars, they voted to give sixteen dollars to the school. Edward, who was recognized as an expert in manuscript writing, was asked to write a letter to Miss

Pratt to go with the gift. He was delighted with this honor, but asked for help in composition. Marshall submitted a draft letter which was accepted by the group with a few minor alterations and turned over to Edward to copy. He was slow getting at it until someone proposed transferring the job to another child, whereupon he finished the letter at once, and in accordance with his usual high standard.

Although the sixteen dollars did not go far toward paying for the press, the group hoped it might establish a precedent, and that other classes that used the press might make a contribution out of their earnings in the same way.

With the magazine finally out of the way, the children attacked toy making with a new zest. Up to this time nothing had been done about working out prices or methods of selling beyond a general plan to launch the new business by a Christmas sale. Now, however, Ben suggested a trip to Macy's toy department to investigate market prices, so we all went in a body. Polly took pencil and paper along and kept notes on the prices of special toys we thought nearest like our own. When we got back to school she made a neat copy of this on her own initiative, even calculating the price of individual dolls in one instance where the price given was for a set of fourteen. Their serious and businesslike attitude in looking up the information they went for was an amusing contrast to the childlike joy with which they rode up and down on Macy's escalators.

The girls spent several mathematics periods working out the cost of the wood used for horses and dolls and were interested to find that the results obtained by three different methods of measurement agreed within a fraction of a cent.

Mr. Kusner who came into the school in December for special work on mathematics helped us figure on this. After rough estimates of the area of the piece of wood needed for one horse, the girls experimented with the stencil model Ellen had made, to find out how many horses could be cut from a given length of board with the least possible waste. This led to Mr. Kusner's proposal to find out what per cent of wood was being wasted. In order to do this, the whole class measured the area of a horse by tracing the outline on squared paper and counting the squares and fractions of squares.

Only Edward, Polly, Ellen, and Anne, were more than an inch off in the accuracy of their count. The results of the rest of the class were averaged and all worked out this problem: If fifty-seven horses of the given area are cut from a piece of wood 2 x 4 ft., what per cent of wood is wasted? As the cost of the wood turned out to be a very small item in the selling price of the toy, as compared with the labor involved in the making, there was not much interest in continuing the investigation for other toys. As the problem seemed more academic than vital, Mr. Kusner and I agreed that it ought not to be pushed.

Miss Pratt encouraged the group to start selling as soon as possible, so that they might find out whether their new business offered prospects of success. Bob, Marshall, and Ben proposed putting the toys on sale on a Wednesday evening when many parents came to the school for classes, and these three and Adam all volunteered to be present to handle the sale.

Paul, who was business manager, was sick at the time so Marshall took his place and handled the money, but proved much less responsible and accurate than Paul had

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been in handling the sale of the magazines. Marshall even went off leaving the bank containing all the class money on a chair in the hall! The toys were so much in demand after this first sale that a great impetus was given to the work.

Edward's truck was generally voted the best piece of work produced and he was so particular about the workmanship that he refused to accept any help on his models. In consequence he turned out comparatively few.

Adam was affected most of all by the toy drive and finished up ten of his carts with assistance from others in the group. Mr. Reber, the shop teacher, meanwhile had introduced some new, quick drying paints which tremendously improved the looks of the toys and increased interest and pleasure in the work. No two carts or wagons were painted alike unless by special order. The Toy Company became so deluged with orders that they were obliged to refuse to accept any more until after Christmas. All the girls experimented on painting horses in different ways and Ellen made several changes in her model after the first sale in order to meet criticisms expressed by the group as well as for her own satisfaction.

Adam and Edward often stayed after school to work in the little shop. It became generally accepted that no one should use the lathe for "private work" if it were needed for toy making. Some discussion arose in regard to Anne's workmanship on her wagon model. Adam, as shop foreman, brought up in group discussion the fact that she was monopolizing an undue proportion of time at the bench owing to her slowness, and said that while he did appreciate the fact that she "had not had as much experience" as the rest (she was new in the school the year be-

fore) he felt that it was not worth while for the Company as a whole to give her so much time at the bench. After some discussion, Ben offered to help her by taking her wheels home to turn on his own lathe, and I suggested that she work downstairs in the big shop to relieve congestion upstairs. To both of these proposals she agreed willingly. Her model, however, did not succeed in coming up to the group standard of workmanship, so was not put on sale, but was accepted as satisfactory for a model to work from. Anne undertook to make up better ones with help from Mr. Reber in the shop. All the criticisms were kind and constructive, and were received as such.

As the day of the final Christmas sale approached, work became so pressing that Ben expressed the general sentiment by saying feelingly, "We've got to cut out studying this week," (the last three days before Christmas). I agreed, and all turned their whole attention to toys, advertising posters, and arrangement of the room for the sale. Edward and Adam continued to the last moment to be outstanding in their steadiness of work though all turned in to help wherever needed. Regular sales slips such as are always used in the school store run by the eight-year-olds were used to record purchases. Paul instructed all the sales people to accept no cash, but to make out the sales slips for the customers and to send them to pay him at a separate cashier's table. There was no confusion at all in this, and his accounts balanced to the penny. Some interference by me was needed, however, to give the girls a chance at the selling.

The sale brought in over twenty dollars in cash, and the children decreed themselves a "day of rest" to celebrate their success. This was spent largely in the laboratory and

shop, finishing individual Christmas presents or in the kitchen, preparing for the school Christmas celebration.

This habit of resting up after a spurt of hard work had been initiated by Bob after the first toy sale. He had been eager for some time to go on a trip and proposed the Tidewater Paper Mill which had been visited several years ago by some of the class; but all were too busy to spare the time before the sale. The trip was planned, therefore, as a special celebration for the following afternoon. We went by ferry to Brooklyn and found the trip in the Bay almost as interesting as the mill itself. There every process of the paper making was accurately observed, from the huge piles of wood pulp, to the finished product loaded on trucks. Adam was, as usual, especially interested in the details of the machinery. All exclaimed over the vivid demonstration of the fact that hot air rises as shown at the top of the staircase descending to the drying room.

The trip home by ferry was given a special flavor of romance by the sunset lights seen in the Bay and the reflections in the windows of the sky scrapers. Ben compared Brooklyn Bridge to a rainbow arch and he, Marshall, and Adam all became quite subdued and reminiscent of past experiences of beautiful sights. Ben was interested, too, in a discussion I started on the architectural effect of New York. Marshall was impressed by the contrast of New York's beauty as seen from a distance, and the dreariness of the streets "when you get down into them."

After Christmas, Adam was the first to revive the toy making by cutting out pieces for twenty-four new carts. Ben helped him in this and both boys used the big band saw in the shop to cut their wood. They had been by

themselves to the lumber yard after consultation with Mr. Reber about the kind of wood needed and had picked out and bought their own wood. During one week when Adam was out sick, Ben and Marshall volunteered to help him by putting together some of the carts he had cut out.

Ben went over all the paints and made a list for Paul of what was needed. Paul took Bob with him on a shopping trip for these one day after school and they interested the science teacher, Mr. Paley, in trying to discover why the new paints were so expensive. He analysed the "thinner" for them, and they were much excited to hear that they would be able to make it for themselves for about half what they paid for it. Bob undertook it at once and no more was bought from then on. He and Edward also learned to use the band saw, and Bob cut out a new set of twenty-four dolls and started painting them.

Catherine worked for a while on a new model for a woman doll, but never made it up. Anne used the mitre box with help from Mr. Reber to cut out pieces for six wagons from her original model and did with interest and accuracy the measuring and calculations required. Mr. Reber prepared the big boards for her according to her specifications of the length and width needed and she did in connection with this practical problem the best piece of mathematical thinking she had ever come through with. All the toy making suffered from the pressure of interest in the plans to dramatize a coal strike and from the universal interest in reading aloud *The Tale of Two Cities*.

Anne went on with the work on her trucks and I encouraged her to do so as I felt anxious to have her complete a successful product for her own satisfaction. Mary

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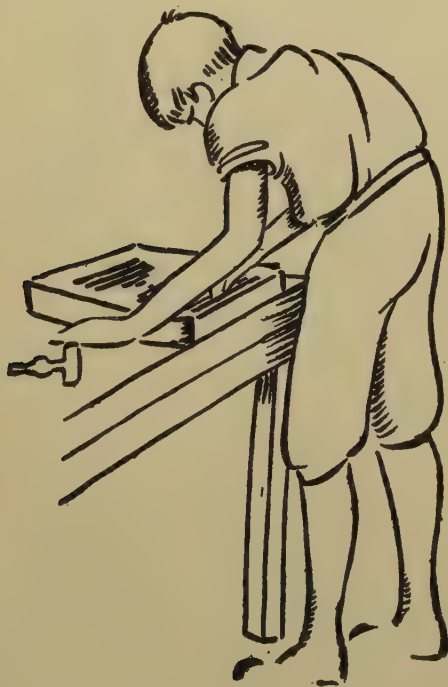
and Catherine painted some of Adam's cart bodies, but finally, about the first of February, by common consent all toy work was suspended "till after the play." Notices to this effect were sent out in response to orders for toys from the younger groups.

By the time the play was actually given early in May, the children had begun to feel the definite need of building up their somewhat depleted treasury in order to finance a trip on the day boat to Indian Point which they had been planning all the year as a final class picnic. Toy making was revived with a drive! Indeed, on the very day of the play's final performance, Ben and Bob started putting the shop in order again, sharpening tools and buying new supplies of wood and paint. Bob finished up about two dozen dolls and also a new horse model which was accepted enthusiastically. Part of the secret of its popularity was in his very good painting. Toward the end he enlisted Polly's help in this, giving her a model to copy which she did very well.

Everybody worked on Adam's carts so that these formed the chief stock on hand for the final sale, but Edward and Ben each turned out a truck, and Anne had two of her wagons very satisfactorily finished and equipped with teams of Bob's new horses carefully selected to fit the color schemes of the respective wagons. Adam made the wheels for her as she had difficulty in getting the right size and shape.

Something of a financial panic was caused by the discovery that full fares instead of half fares would be required for the trip up the river, but the sale proved so successful that all expenses were paid, including the tickets to a dramatic version of *The Tale of Two Cities* for the

whole class, and ten dollars were left in the treasury to start work the next fall. "We'll keep on making toys until Christmas time and have a big sale then to finance us for the year," they planned.



CHAPTER III

HISTORY AND GEOGRAPHY

As the group had expressed a desire to go on with the study of early American explorers begun the previous year, I raised the question of what was known about the world before Columbus' voyage. The ensuing discussion reviewed the high points of their study during the last two years of the development of civilization from Babylon and Egypt through Greece and Rome to Mediaeval Europe.

Paul and Bob were able to locate on a physical map of the two hemispheres all the places mentioned. Egypt and the Nile Valley, Babylon and the Tigris and Euphrates, India, China, Japan, Italy, Greece, France, Spain, and Germany were fairly definitely located in the minds of all but Anne, judging from the outline maps colored by individuals to represent countries known.

There was a good deal of discussion about early ideas as to the size and shape of the earth and I told them something about the advanced scientific work of the Greeks. The location of their country was recognized from the map as a factor in making them preeminent in navigation. I described the Greek division of a circle into three hundred sixty degrees and the invention of longitude and latitude. We consulted pictures of Ptolemy's maps for his idea of the world.

When I said that Columbus' miscalculation of the size of the ocean was due to the exaggerated idea of the size of a degree of longitude, Paul objected that "That would make him think the world was larger instead of smaller," and I had to explain more accurately that the mistake was due to the exaggeration of the size of the *known* world in relation to the whole.

In review of the science work done last year on winds and weather, I brought up the subject of trade winds as a help or hindrance to early navigators to the new world. No one remembered exactly what kind of winds they were, but Paul said they could always be depended on. Bob thought they had something to do with hot air. I accepted both these remarks as clues and asked where on the earth hot air would be found and how it would act. Adam said that it would rise at the equator. From this they worked out that trade winds would blow toward the equator from North and South, and when I introduced the factor of the earth's rotation as interfering with an exactly North or South direction, they worked out for themselves that the winds would blow from the Northeast and Southeast.

Paul, Bob, Marshall, and Leo were particularly clear at working out practical deductions from known principles in this way. To make sure that everyone was taking part in thinking out these problems, I put on the board some general questions of this kind in world geography and asked everyone to write the answers. Ellen, Polly, and Catherine worked on these questions with interest and independent attack, though they asked me for occasional help. Marshall, too, was greatly interested, especially in problems dealing with longitude and time. The girls made

maps of the five temperate zones and showed on them the principal wind belts as well.

All the group remembered clearly the stories of the voyages of the Norsemen, of Columbus, Balboa, Magellan, and Amerigo Vespucci. We traced all of these on the map and compared the various ideas of the world expressed in contemporary maps. As Cortez was a new name to them, I read aloud the story of the conquest of Mexico from Fiske's *Discovery of America*. For the first time this year the interest of every one in the group was caught and held. They kept urging me to read more, so on two successive mornings I read for an hour at a time. As interest was so keen, I asked every one to write a story of his own about the Aztecs, and each one did so with enjoyment.¹ All the finished stories were read aloud by the authors and discussed as to both form and content. I went on to read from Fiske the story of Las Casas' fight against the Spaniards' treatment of the Indians, and there was the same close attention and interest. The story of De Soto from *Horses* by Mrs. Mitchell was enjoyed also.² John said that it sounded "almost like a poem."

In order to get a connected thread of events, the whole group read together several chapters from Beard's *First Book in American History*, taking turns reading aloud from individual copies of the book. All read fluently and with good expression except Ben, Catherine, and Edward. The first two stumbled a little, and the last read too rapidly to be understood. He liked reading aloud, but was self-conscious.

After reading in this way about the voyages of Cabot

¹ See Chapter IV, pages 44-46.

² Mitchell, Lucy Sprague: *Horses*, page 147; (Harcourt Brace).

and Verrazano and the Elizabethan seamen, ending with the defeat of the Spanish Armada, I asked the class to look up Champlain and write the story of his explorations. They begged, however, that I read aloud to them instead from Champlain's *Diary*, and let them write the story afterward. As Leo, Marshall, and Ben had gone ahead with research work on Champlain, but had not yet finished their papers, I did not want to steal their thunder, so read from Parkman's *Pioneers of New France* the account of the attempted French colonies in Florida.

Marshall wrote both the life of Champlain and the story of the May River colony, but the rest wrote about one or the other. Polly, Ellen, and Catherine illustrated all their stories. George came back after a week's illness, read up for himself the stories I had read aloud and wrote a matter of fact narrative of events. He worked well at independent research on an assigned topic, but showed no interest in literary expression. He and Marshall both worked on extra assignments in geography problems while the rest were at rhythms and both brought back well organized results in writing.

To review the explorations of the 16th century as a whole, before going on, I put up a physical map of North America and asked where and by whom any permanent settlements had been made by the end of that century. Leo said, "On the islands by the Spanish" and pointed out Cuba, Porto Rico, and Haiti on the map. Bob added the settlement at St. Augustine in Florida and located it approximately as just south of the mouth of the St. John's River which he found on the map. Polly added Mexico and I added the rest of Central and South America as Spanish possessions.

I asked if anyone could suggest a reason why the French tried to settle in Florida so near the Spaniards when Cartier had already discovered the St. Lawrence for France. Marshall said the climate of Florida was better, and Polly thought that they expected to find gold in Florida because the Spaniards had found it in Hispaniola and Mexico. All noticed the mountains in Hispaniola and Mexico contrasted with the lowlands of Florida and scoffed at the idea of finding gold there. Bob said Florida was made of coral shells so could have no mineral deposits anyway.

I asked everyone to look at the coast line and pick out any places between Florida and the St. Lawrence that might have been explored for a passage to India. Bob was the first to pick Chesapeake Bay, but Edward had the same idea. I asked them all to look in their histories and see if they could find out who did explore that first. Both Raleigh and John Smith were mentioned, but the former was finally given priority, and we reviewed the story of the Roanoke colony read in the history text books.

Bob then said he should think that if the English kept on exploring up that river, they would soon reach the Great Lakes. I asked what might interfere, and a chorus responded "mountains." Marshall thought the French would have reached the Great Lakes quicker by way of the St. Lawrence, but someone else mentioned Niagara Falls as an obstacle in their way.

This led to a discussion of present day canals and someone asked where the Erie Canal was. I said it connected the Hudson with Lake Erie and asked if anyone saw on the map a good place to build it. Marshall picked out the Mohawk Valley depression, and this was at once recog-

nized as an easy access to the Great Lakes from the Dutch colony on the Hudson. Great eagerness was expressed, especially by Ellen, to find out which nation really got there first, but I left it for them to discover. Polly thought the Spaniards in Florida would have had the easiest time of all in getting into the interior, but Marshall said swamps and jungles would hinder them. He had done some special work in looking up a comparison of physical conditions in Florida and the St. Lawrence region.

Meanwhile on suggestion from Paul, I had started reading aloud from Champlain's *Diary*. I read for about an hour the first day urged on by comments from Bob and Paul. All were so interested that I read, without skipping, the whole account of his voyage of 1608, including the expedition against the Iroquois. Bob stipulated in advance that I should never "stop in the middle of a fight because it is ten o'clock!"

When we finished the *Diary* account I started a review discussion of the principal points involved, such as why Champlain chose Tadoussac as a center for the fur trade, why not for a settlement, why his colony was more successful than Ribaut's, etc. The last point brought the most interested discussion. Ellen said that Champlain was more successful because he planted gardens and Ribaut did not; Marshall added that Ribaut had no farmers in his party. He also pointed out the relative climatic advantage of Ribaut's location and Champlain's success in the face of obstacles. He and Polly contributed most to the discussion. They compared Champlain's treatment of the Indians with the relations of Ribaut's followers to the Indians, but all agreed that the nearness of the Spaniards had been the decisive factor in Ribaut's failure.

In comparing the Indians that Champlain described as living along the lower St. Lawrence with the Florida Indians and the Huron-Iroquois groups, I raised the question whether the climatic conditions of the former district were responsible for the primitive state of the inhabitants or whether the lack of development of the people was responsible for the unproductive state of the land. Marshall argued strongly in favor of the first proposition. By way of throwing light on the subject we wondered what effect the climatic conditions of the lower St. Lawrence had had on European settlers. All knew that Miss Garrett, their teacher of the previous year, had been in Newfoundland, so we invited her in to the next morning's discussion to tell us about conditions there at present. Marshall seized each point in her talk that bore out his argument. The whole class reached the conclusion that in Newfoundland, at least, the land had been the dominant factor.

Ellen had been very much interested in finding out for herself who first discovered the Great Lakes and I did not wish to anticipate her research by reading aloud further, so I put on the board a list of questions or topics for all to work on.

These topics covered the first discovery of the lakes and I followed it up by reading aloud from Baldwin's *Discovery of the Great North West*, a book dealing with further explorations. Every step was followed on the map and Marshall was especially interested in guessing each time which lake would be found next. "Why didn't he go just a little further and find Lake Superior?" was the sort of question he would ask as I read. Adam became excited as he saw the way to the Mississippi opening out. "If they

go down the Mississippi, won't they run into the Spaniards?"

I read the story of Father Jogues adventures from Parkman's *Jesuits in North America*, and then asked the class to find out for themselves all they could about the discovery of the Mississippi and to make their reports on the last day before the Thanksgiving holidays. I suggested books for reference and individuals chose various topics, such as, Joliet and Marquette, La Salle, Tonty, Count Frontenac, and some the Mississippi River system itself.

Bob and Ben rejected the books that I had suggested and went to the library to consult the encyclopedia. Bob was the first to finish his paper and brought it to me asking anxiously, "Is it good enough?" Ben having finished the La Salle paper started to look up the story of Tonty in a novel of that name.

Paul was so enthusiastic over McMurry's *Pioneers on the Mississippi* that he said he would *have* to read part of it aloud to the class. "You can read it just like any book!" he said. And he did so in his noon reading time. Catherine felt the same about Marquette's *Journal* which she was reading and also decided to read aloud an extract from that. Ellen wrote a story on the *Death of Marquette* as a result of her reading. Polly wrote about the Mississippi River system, and Anne the St. Lawrence, Mississippi, and Hudson, while Adam took the Hudson only and had much difficulty doing anything with that. As Edward was so very deep in an Indian story he had already started, I agreed to let him finish that instead of looking up a new topic. We put his story on the final program of reports as a picture of the life the white men found in

America.¹ Everyone was so absorbed in these reports that we skipped French and German classes for two days and mathematics, too, on one day.

Paul made the best organized report, giving a verbal introduction to the extract he read aloud, and adding a conclusion. He recommended my reading "the whole two chapters" to the class. Catherine read aloud a good selection describing the Mississippi Valley itself and the buffaloes on the plains, but it was difficult reading and she could not read it aloud readily enough to hold the interest of the group. She gave me later a spontaneous, fluent account of what she had not been able to read aloud and said that she wanted to finish the whole journal.

There was a discrepancy in some of the papers as to who had discovered the Mississippi first, Marquette or La Salle, and Catherine went to the original diaries of Marquette and Tonty to look up the dates. "Tonty ought to know, because he was with La Salle."

As a review game one day just before Thanksgiving, I gave out papers with "true or false" statements about the people and country we had been studying. As I reported a difference of opinion on various points, Ben suggested a debate and the class lined up according to their opinions on each point in question. Adam said that he "had guessed" and had no arguments to back his statements. Nearly all the others had definite reasons for their opinions even when wrong. The side that was right was able in each case to give reasons that convinced their opponents and were particularly delighted with the success in one or two instances when they were in a small minority. The list of statements was as follows:

¹ See Chapter IV, page 48.

REVIEW PAPER ON FRENCH EXPLORATIONS IN U. S. IN 17TH
CENTURY*True or False?*

1. The Iroquois Indians used to paddle up the Hudson River into the St. Lawrence and attack the French.
2. It was fortunate for the French that Champlain made friends with the Iroquois.
3. The Mohawks belonged to the Iroquois League of the Five Nations.
4. Isaac Jogues was one of the most adventurous fur traders.
5. After the French Protestants were driven out of Florida by the Spaniards, another party of Protestants under Champlain founded Quebec on the St. Lawrence.
6. The Ottawa River was an important help to the French in exploring the country.
7. The Saguenay River was used: (a) chiefly by war parties? or (b) fur traders?
8. The soil along the lower St. Lawrence is very fertile and favorable for growing corn.
9. The Iroquois and Hurons lived only by hunting and fishing.
10. The Indians who lived around the Great Lakes knew how to work copper.
11. Champlain taught the Hurons and the Algonquins on the Ottawa River to grow corn.
12. The Indians gave food to the settlers at Quebec to keep them from starving in the winter.
13. All the Indians Champlain met were cannibals.

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14. The Indians in Florida raised corn for food and lived in villages.
15. The Jesuits were so cruel to the Indians that they made much trouble for Champlain.
16. Champlain discovered the Mississippi River.
17. A party of Spaniards discovered the Mississippi River.
18. Quebec was founded in the middle of the 16th century, the beginning of the 17th century, the middle of the 17th century.
19. The Jesuits came to New France to make money in the fur trade.
20. Most of the French settlers made their living: (a) by agriculture, (b) by the fur trade.
21. Not many French settlers made permanent homes in Canada.
22. Montezuma had many ornaments and utensils of gold and silver before the coming of the Spaniards.
23. The Aztecs lived in bark houses with a fire place for each family.
24. The Pope divided the whole of the undiscovered world between the Spaniards and the English.
25. Until the end of the 16th century, the Spaniards prevented any other nation from making permanent settlements in the New World except in Brazil where the Portuguese had a colony.

To follow up the interest in the story of the French in the St. Lawrence Valley and especially the controlling influence of geographic conditions on human life, I read aloud the story of *Maria Chapdelaine*. Interest held so well that I read every word of it stopping for discussions

now and then of the characters, the style of writing and other features of the story. Marshall and Paul were particularly struck with its "difference from a movie," and Marshall was keen and alert to every point. Leo was especially alive to the sentimental interest which all took seriously and without the least self-consciousness. They agreed in preferring the character of Eutrope to Lorenzo "because Lorenzo boasts too much," and approved Maria's choice. Catherine was sure, however, that she could never have lived in that country herself, and this introduced some serious discussion about the life of a girl we all knew from Newfoundland who had been in the school for the two previous years and had gone back home again.

Soon after this Ellen wrote spontaneously a little sketch she called a geography story reflecting her feeling of the atmosphere of life today in the Saguenay River country.¹

When we had finished *Maria Chapdelaine*, I put on the board some history topics referring to the first English settlements in Virginia. Each child chose one to look up and to report on. Polly and Ellen selected the *Lost Colony of Roanoke* and wrote stories on the possible fate of the colonists. As Ellen was absent on the day that the reports were read to the group, Catherine asked me to read Ellen's story as she knew it was "very interesting." Catherine herself had looked up the *Indians of the South* in an original account given in Hart's *Source Book*, and embodied the information that she found in a story. When she read it aloud to the class I asked if it gave them any idea as to the geography of the country and one of the boys volun-

¹ See Chapter V, page 62.

teered at once that it must have been a low marshy country with long reed grasses because Catherine had described the Indian houses as having roofs thatched with grasses. Another boy added that the Indians went duck shooting as evidence of the same kind of environment. The fact that they had gardens and raised corn was mentioned as proof that they must have been in about the same state of civilization as the Iroquois and Algonquins described by French writers.

Anne chose a geography topic to look up and used Mrs. Mitchell's transparent maps of mineral deposits, relief features, growing periods, and rainfall to answer questions on conditions in Virginia compared to those in the French Canadian colony. She wrote this up accurately and intelligently with a little help from me.

Leo and Paul undertook to look up the reasons for colonization from an old document by Hakluyt given in Hart's collection, but Leo became discouraged by the difficulties of old English spelling and print. I gave him Fiske's summary of this same document to study, but encouraged Paul who is less disturbed by unconventional spelling to go ahead and see what he could extract from it by himself. He was delighted to find that he succeeded in getting nearly all the main points. "My paper is the same as Leo's only his is much longer."

Marshall, Ben, Bob, Adam, and Edward all chose the story of John Smith, but used different books. Bob, as usual, consulted the encyclopedia; Edward looked up a book he knew from last year's experience, and Ben, too, found a book for himself, McMurry's *Pioneers on Land and Sea*, with a better account than any I had suggested. His story was so good that it was greeted with spon-

taneous applause from the class when he read it aloud.¹

All were so interested in John Smith and the Jamestown colony by this time that they wanted to hear more, so I read aloud from Fiske's *Old Virginia and her Neighbors*. Paul said that the description of the "starving time" was just like accounts he had heard of present day famines in Russia and he told something of what he knew about conditions there. His parents are Russian and his father is now serving under the Soviet government.

The close of this first period of the history of Virginia brought us to the Christmas holidays, and an unexpected interruption of chronological history then occurred through the absorption of all in the economics and geography of coal mining incidental to the plan to dramatize a coal strike as described in Chapter XI on Dramatics.

History discussions were renewed, however, during February by way of research into the ancestry of the West Virginia mountaineers about whom we read in the various accounts of conditions in the coal districts. Roosevelt's *Stories of the Great West* gave an interesting sketch of these "backwoodsmen" in pioneer days and introduced us to the terms Roundheads, Puritans, and Cavaliers. Every one did some individual searching of history books or encyclopedias for the story of the English Civil War which made an interesting point of departure for a discussion of the types of settlers in the various American colonies.

The chief means of support in the several settlements were also considered, and tobacco, furs, and fish were picked out as the leading products. In discussing the problems of New England, some one started speculation on the probability of their coming into conflict with the French.

¹ See Chapter IV, page 51.

As this led into the subject of the French and Indian Wars, I asked the whole class to read the account in Beard's text-book. They were so much interested in the story of Wolfe that they asked me to read Gray's *Elegy* on the strength of Wolfe's enthusiasm for it.

After this I asked them to locate on an outline map, the thirteen original colonies and the principal rivers we had talked about, the Hudson, St. Lawrence, Connecticut, Delaware, Susquehanna, and Ohio. This brought out a great deal of uncertainty on the part of most of the group. The various types of Colonial governments (charter, proprietary, and royal) were discussed, and each colony was looked up in history text-books to see in which class it belonged. All found this text-book work very dull, however, complaining "it skips all the interesting parts." They welcomed my proposal that each read instead one book from a list and that I read aloud in class from Fiske's *Story of the Revolution*.

During the first part of March we had history periods only twice a week with the first hour on the other three days spent in working on the play. I read aloud from Fiske about the events leading up to the Declaration of Independence, and the children looked up special topics in their text-books, or other histories, and wrote papers on them.

Adam finished the *Wilderness Road*; Paul and Leo read the chapters on *Pioneer Life* from Roosevelt's *Stories of the Great West*; Harry read one volume of the *Conspiracy of Pontiac*, and most of *Montcalm and Wolfe* by Parkman; Polly and Ben read up on Witchcraft from Fiske's *New England and New France*, and Bob read a biography of Benjamin Franklin of which he gave a good

verbal report to the class. A long continued story he was writing was taking so much time just then that he asked to give his history report orally instead of in writing.

Catherine, Ellen, and Anne had trouble in finding the information they wanted about Patrick Henry, Paul Jones, and Thomas Jefferson respectively, until I told them to look in their own textbooks which they had not thought of consulting, but which happened to have very good accounts. Catherine and Mary, in addition, did a good piece of work in hunting up the *Five Intolerable Acts* by which Boston was punished for the *Tea Party*, and brought in a clear, written report. They were puzzled, however, as to why religious toleration for Catholics in Quebec seemed "intolerable" to the New Englanders.

After this the class petitioned for daily history periods again, saying that otherwise they found it hard to keep interested. Consequently, we dropped morning rehearsals except for one day a week and resumed the daily history reading. Nearly the whole of Fiske's two volumes on the American Revolution were read aloud during the spring and followed eagerly. Catherine said that it was "as good as a story," and she wished there were more volumes.

Comparisons were made constantly between situations described by Fiske, and those met in our study of present day problems. American "Tories," for instance, were compared to "scabs," and in reading newspaper accounts of the British General Strike, Bob commented that Baldwin's refusal to deal with the strikers while they were in rebellion was "just like what the English Government said to the Americans."

The *Cabal* against Washington during the war roused much excitement. Marshall summarized for Paul's benefit

one day what we had read during the latter's illness: "Gates is a regular crook. He is always trying to take credit for himself and get Washington's place and Washington is always finding out about it and writing him stiff letters." Marshall was very quick to see for himself the strategic value of the Hudson Valley and to foresee the British plan of campaign. There was a good deal of free hand drawing by everyone of crude maps of this part of the country to accompany the discussion of Burgoyne's campaign and the distribution of the various armies. Relief features were, of course, an essential feature of such maps.

Meanwhile Mrs. Mitchell had been making individual appointments in afternoon free time with any children who wanted to make maps, and a great variety had been produced. Mary, Anne, Polly, and Catherine made relief maps in plastelene of the United States, using outline maps as a foundation. This involved much discussion in small groups of the general physical features of the United States as a whole and their effect on the occupations of the inhabitants.

Ellen made a map showing the distribution of different fruits over the United States and the influence of climate and relief features on fruit growing. Bob made a "meat map" showing where the best grazing lands are, where the cattle are fattened, where slaughtered, and how distributed to the centers of population. He also summed up the result of this study in a story called *The Life of a Beef Cow*.

Marshall, Ben, and Paul were in one group, as usual, and the rest joined for discussions. Edward continued

working by himself with infinite pains on a map of the two hemispheres showing general relief and vegetation. This led to a discussion with the whole group of different types of projections for maps and the reason for choosing the particular one shown in the outline maps we use where the distortion falls in the water surface rather than the land. The children worked it out readily for themselves in answer to questions.

When left to himself Edward did chiefly straight copying with his interest all centered on the decorative effect, but when forced by questions to think about the conditions, he seemed well able to do so. The same inability to force himself into anything new that showed in other ways seemed evident here. He himself has analysed this, "I can't start anything." He definitely set himself to conquer this difficulty, however, and by the end of the year had made marked progress, particularly in his original writing.

Books kept on shelf in classroom and used for reference by teacher and children. (Those starred were read aloud to the group in part or in whole.)

ATWOOD: *Geography Text-book*

BALDWIN: * *Discovery of the Great North West*

BEARD: *First Book in American History* (used as a text-book with individual copies)

History of the United States

DUNBAR: *History of Travel in America*

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FISKE: * *American Revolution, Vol. I and II*

* *Discovery of America, Vol. I and II*

* *New England and New France*

* *Old Virginia and Her Neighbors, Vol. I*

School History

FRANKLIN: *Autobiography*

HART: *Original Source Material in American History*

HEMON: * *Maria Chapdelaine*

JORDAN AND CATHER: *Highlights of Geography in North
America*

KRAFT: *America the Great Adventure*

McMURRY: *Advanced Geography*

* *Pioneers on Land and Sea*

Pioneers on the Mississippi

PARKMAN: *Conspiracy of Pontiac*

* *Jesuits in America*

La Salle

Montcalm and Wolfe

Old Regime in Canada

* *Pioneers of France*

PUSEY: *Wilderness Road*

SCRIBNER: * *Champlain's Diary*

Early English Voyages

Journals of Marquette and Tonty

Original Narratives of Spanish Explorers

SEMPLE: *Geographic Significance of American History*

CHAPTER IV

STORIES ON HISTORY TOPICS

As great interest had been shown in the story of Cortez' conquest of the Aztecs, I asked everyone to write a story about it, choosing whatever aspect interested him or her most. Several wanted to write an account of the Aztec people, so we worked out together an outline for such an account. Bob suggested most of the topics, such as, Food, Housing, Way of Earning Living, Methods of Defense, and Religion. He, Paul, Adam, Leo, Marshall, George, and Anne followed this outline. Polly wrote an original religious myth, based on Fiske's account and illustrated it. Catherine also did an illustrated story of Aztec religious beliefs, and Ellen, Edward, and Ben wrote narratives of Cortez' arrival. Warm approval met Ellen's interesting beginning which was as follows: "Montezuma had just finished his meal of human flesh and stewed ants with Chili sauce and pepper and pulque wine, when his tax gatherer entered." . . . Paul compared this with the "slow" beginning of Cooper's novels to the disadvantage of the latter.

Edward was unable to start at all until I asked him if he did not know what to say and encouraged him to tell his story first orally. Then he began to write fluently.

After reading aloud to the group Parkman's story of the first French attempts at colonies in Florida, I again asked for stories. In fact Ellen had already asked for a chance to

write on this subject. Again various episodes were chosen by individuals for dramatic treatment, and Ellen, Polly, and Catherine made especially vivid word pictures. Others wrote complete narratives.

Edward again sat blankly and no encouragement I could give produced any result till I sent him away to the library to work alone. He came back with a well composed story which he asked to dictate to me. The trouble was in his inability to spell words he wanted to use, so I supplied him with these.

Polly and Ellen both wrote spontaneously, original stories inspired by Champlain's *Diary* and by *Maria Chapdelaine*, full of the geographical background of life in the lower St. Lawrence region. Polly's story was of the early days of the first fur traders, and Ellen's introduced the French flavor of present day life on the Saguenay River.

The rest of the stories were written for the most part as a result of individual research on definitely assigned or chosen topics, as described in the preceding chapter.

CORTEZ AND THE AZTECS

by Ben

1. In the year 1519 Cortez landed on the coast of Mexico with a crew of 450 men. A great tower had come over seas to Mexico. Montezuma's tax gatherer saw this great tower, and took the shortest trail to Tenochtitlan, to tell Montezuma that Quetzalcoatl had come back to Mexico to take the throne from him.

2. Cortez left a few men to guard the ship and the rest went to Tenochtitlan with him. On his arrival he was received hospitably by Montezuma. They stayed for a

while. At last Cortez realized that something had to be done, after seeing what kind of sacrifices they had, and at length he decided to capture Montezuma. So taking with him some men, he rode through the streets to the temple and captured him.

3. At that the people were full of wrath and appointed another chief. Cortez going back to the house Montezuma had provided for him when he had come taking Montezuma with him, the people with their new chief (Montezuma's cousin) made war on this house, and Cortez who could not withstand such an attack, sent Montezuma up on the roof to calm the blacks.

4. Instead they shot arrows and hurled rocks at him and he died a few days later.

THE AZTECS

by Polly

(Polly was particularly interested in the religious symbols of the Aztecs and embodied in this myth all the emblems of Quetzalcoatl she had read about.)

A gray bird with white wings came flying through the water. Montezuma's tax gatherer ran to tell Montezuma. He told him a great bird had come over the great waters. With the bird came the great white god, Quetzalcoatl, and his followers. The next day they made sacrifice on top the great temple. One man was dead being dragged down the stairs. One man was on the altar ready to be sacrificed. The priest had the knife raised when a bird came and clung to the knife. Then a serpent wound around him. Another serpent stood ready to strike, guarding the man. Up the stairs came a man dressed in feathers blowing on a reed flute and waving a cross. The dead man came alive and went up to an idol and took his heart out of its mouth and walked down the stairs. The man on the altar suddenly changed white and went down to greet the strange man. The strange man ordered the priest to

bring water to wash the altar. When it was washed he told his name. This man was Quetzalcoatl, the great white god.

THE AZTECS

by Ellen

Montezuma had just finished his meal of human flesh and stewed ants with chili sauce and pepper and pulque wine, when his tax gatherer entered and told Montezuma he had seen towers floating on the sea. They remembered the fight between the night god Huitzilpochtli and the fair god Quetzalcoatl. After he had been knocked down from the sky twice he left with his followers and it was said that he would return and stop human sacrifices.

(The following is a story about the end of the first French settlement of the 16th century by Ellen with an introduction added by her later to clarify the story.)

(In the early 16th century the French went over to settle in what we now call Charleston north of the St. John's river. They made a settlement while others went back to bring supplies. At the settlement the food gave out so they decided to go home again. They built a craft and set sail.)

ON THE RAFT

by Ellen

Men lay moaning about the deck. Women and children huddled together. Some ate kernels of corn they had saved. Some munched leather. In one more day all the corn would be gone. If they could only reach France their own country again. They sailed on, days after days. Many died. Their boat would wash away soon. When one day happy cries came from all the people for they saw the coast of France ahead. They were too happy to steer. They saw a ship was ahead. "They will come to free us from this miserable craft," they cried. They held out the

French flag in hopes that they would be seen. The ship drew near, but it held an English flag. They were captured, never would they see their own France again.

THE END OF THE FRENCH COLONY IN FLORIDA

by Paul

The Spanish rushed down with shouts of triumph upon the defenseless camp. Santiago!!!—Santiago!!! rang their battle cry! The sick men rushed from their beds. The women and children fled. But the Spanish rushed through the camp and slew all. There were only ten men and some women and children against five hundred Spaniards. Three of the men escaped. They did not know what to do, the rest of the French were away to fight the Spanish, but while they were sailing to the Spanish the Spanish had gone over land and had attacked the defenseless camp. Two of the Frenchmen that had escaped went back and begged for mercy from the Spanish. The Spanish slew them on the spot. Then a terrible storm arose and the French in the ships were wrecked and only few lived to tell the tale.

A FRENCH SETTLEMENT IN FLORIDA

by Catherine

PART I

Up the May river came a fleet of French ships. Up till they reached Florida. There they landed in the place where they were to have their fort; men, women and children. They liked that new land of warm sunshine. The men chose the place to start their fort. In two weeks the fort was finished. They named it Fort Caroline.

PART II

The fort was half wrecked. There was nobody in it; something terrible had happened. There were blood stains

all over the ground. Pieces of arms lay about; swords, helmets, shields. What had happened to the little colony? All but two lay dead. The Spaniards had come to the fort by night when the French had sailed to St. Augustine and left very few men to guard Fort Caroline.

MY INDIAN STORY

by Edward

(The following is a story worked on from day to day, alone in the library with deliberate intention to gain facility in writing.

I said good-bye to my people and was off through valleys and over hills. For weapons I had a bow and a score or more arrows and a tomahawk and a knife and I was out for big game. I soon came upon a little brook. I got down on my hands and knees and started to drink. I had no sooner started to drink than I heard a rustling in the leaves behind me. I jumped up and ran back a little way until I came to a little open space. I saw a bear and a cub. I had my bow ready and I shot at the big bear. My arrow hit him in the leg and filled him with rage. The little cub was coming at me now. I got another arrow ready and when the little cub came near I let the arrow go. That was one of the best shots I ever made for it hit him in the eye and killed him. The big bear was coming at me now. I pulled my bow string back as far as it would go. And when I was going to let my arrow go the bow broke. I ran to a tree and began to climb it and just as I was getting out of reach the bear got up on his hind legs and got hold of one of my legs and pulled me down. I was so scared for a second I did not know what to do.

The bear hit me on the head and almost stunned me. I got out my knife and tried to kill him with that, but he knocked it out of my hand and bit one of my fingers

off. Then I hit him on the head with my tomahawk and killed him. Then I skinned him and the cub and went home.

A TRADING STORY

by Polly

(A spontaneous story inspired by the reading of Champlain's Diary.)

CHAPTER 1

Champlain had come to New France to discover a way to China. The King gave him the fur trade, so he could get enough money for food for the settlement at Quebec.

Near the Saguenay river was a fur trading post named Tadoussac where Champlain left his ships and went to Quebec.

The Saguenay river was a wild and desolate place. Great rocks rose from the river. A little fertile ground was near the St. Lawrence river.

A few Indians were camping there. They were waiting for the moon to come up. While they were waiting they put their few belongings in packs and put them on their backs, then they sat down around the smoldering fire, in silence. After a while a man rose and paced up and down near the fire restlessly. Now and then he would stop and raise his face to the sky.

Soon the moon came up. The Indians rose, and with their wives and children, they started.

They were to travel a hundred miles to Quebec through the snow.

CHAPTER 2

At Quebec the settlers were very busy. Some were salting meat that the hunters brought back from their hunt

in the forest. The trappers had caught a lynx in a trap and its cub seeing its mother caught had stayed there. The men had brought it back. The people were very excited over it. When the Indians came, Champlain welcomed them. They had come because they were starving. Many things happened at the fort.

In May the great event of the year happened. Many Indians had come from the Ottawa river and Saguenay. Champlain and some of his men came to Tadoussac for the annual fur trading with the Indians of all tribes. Champlain started with his men, each had with them a small quantity of mirrors, beads, and pieces of tin, tin kettles and pieces of red, blue, yellow, green cloth and bright colored blankets, one or two had short capes, all to trade with the Indians. The Indians got very excited over the little bits of tin which the men had dropped. Each Indian that had a piece would sit looking at the way it shone in the sun. The ones that had little pieces of mirrors, called them, "still water," because they had seen their reflection in the water. One man had a glass bowl, in which he put his hand to get a little tin. When he had it in one hand, he was going to take it with the other hand. He tried to get it, and was very frightened when he could not reach it.

Champlain gave the chiefs capes in which they strutted around proudly. They would wrap the cloth around themselves, and walk like gay roosters, then a musket was fired. All the men ran toward their canoes and returned the things they had been looking at. They would carry back big bundles of fur and sit in a circle with the furs in front of them.

Then Champlain stood up with his interpreter with the goods around him. Then a chief stood up, and said, (in the Indian language) "For sixty beaver skins will you give me a kettle full of trinkets, a small mirror, and two yards of bright checked calico?" It was accepted, the furs were put in a boat of Champlain's, the Indian took his goods and went. There were many other bids. The In-

dians left. Champlain had 450 furs. The furs were brought to the fort.

When the supply ship came he traded the furs for food and money.

JOHN SMITH

by Ben

(Material gathered from independent research. See Chapter II.)

After the death of his parents, John Smith at an early age had served a while in the French army. Later he spent three years in the Netherlands fighting against the Spaniards. In 1600 he returned to England where he built a little log house in the woods where he lived a while studying books of war and fighting. Then after a space of time he grew discontented with this hermit-like life. He was desirous of seeing more of the world, and he always wanted to fight the Turks. He was in France in one of his previous adventures one night, while walking on a lonely road when he was attacked by robbers and they took everything he had with him. Finally, he got to Marseilles and here he embarked for Turkey. A storm arose and the crew said it was because they had this heretic on board, so they threw him overboard, and it happened that there was a certain island near, and he swam to it and it was a small one with no inhabitants but himself. The next morning he was picked up by a Breton vessel whose captain knew some of Smith's friends in France and Smith was treated very well.

The boat which he was on was bound for Egypt and Cyprus. On the return trip they fired on a Venetian boat and took all the spoils and divided them among the crew and Smith got 225 pounds in coin and a box of goods worth nearly as much more. They landed in Piedmont and Smith got off there and journeyed through several cities in Italy and finally made his way to Venice.

From there he went to Styria and went into service for Rudolph II and in a short time he was captain of 250 cavalry. During the years 1601 and 1602 Smith saw much hard fighting with the Turks. Days went by of fighting and the Turks would throw taunting insults down from the high walls. So finally, one of the Turkish captains challenged to have a duel and the winner could have the loser's head, so Smith's men cast lots and the lot fell on Smith so he had choice of weapons, so he chose pistols and Smith's bullet laid the Turk dead. This done he drew his sword and cut his head off and carried it to his general in triumph. Two days later the scene was repeated and the last time the Turk had the choice of weapons and he chose a battle axe. At the first blow Smith's axe was knocked from his hand and quickly dodging the next blow, he drew his sword and slew the Turk, and going back to his general he was given a coat of arms, two Turks' heads on a shield. In a certain battle fought in 1602 Smith was taken prisoner and sold into slavery. He endured many hardships and finally he escaped by killing his master and went to England.

INDIANS OF THE SOUTH

by Catherine

(This is the story written to embody information gathered from Hart's Original Source Material about Indians of the South. See Chapter II.)

I was born in a smoky little bark house.

The roof was thatched with some mats.

My bed was four posts stuck in the ground, some sticks laid across and two or three mats on some rushes.

When I was older I played with the other boys all about my own size.

Two or three years later I went hunting for the first time. I killed two rabbits and a wild duck.

When I got home my mother and father praised me and I said I should kill a deer next time.

So I sat down and ate some stewed corn and squash.

The next morning I got up and had my breakfast and went into our garden and picked some corn and squash.

I brought it in to my mother so she could hang it up to dry.

DANIEL BOONE

by Paul

(Material gathered by independent research. See Chapter II.)

He was born in Pennsylvania but when he was still young he went into the western part of North Carolina. There he lived on the frontier, he built himself a log cabin and got married. He chopped trees and worked like the other frontier men.

Indians and a few trappers that went across the mountains came back with wonderful stories and in 1769 Boone excited by these stories chose himself a few men and started out.

He wandered about for a few weeks and then came out in the beautiful fertile country, Kentucky. Big herds grazed here and there, the long grass waved in the breeze and the birds sang.

But one day one of Boone's companions was killed by a passing Indian war party. The others after finding that out went back. But Boone's brother joined him and they spent the winter hunting and trapping and without thought of loneliness. In the spring Boone's brother left him and Boone remained three months alone in the wilderness. After the three months passed Boone's brother came back with a party of hunters. Other parties came and wandered around for not only months, but years. In 1771 Boone returned home.

A WAY OF TRADE IN THE EARLY COLONIES

by Catherine

CHAPTER I

In Africa

Out in the distance a ship had just appeared. The ship was riding fast with the wind behind her. All night she sailed at the same speed. The next morning she anchored at the Cape of Good Hope. Her crew landed on a narrow sandy beach with palm trees four or five yards from the sea. All was still. They knew where to find the savages for they had landed on that same beach many times before. The savages knew they were there for the captain had told them he would come in two months the last time he came. These crazy men were glad for they knew the captain had rum for them. They all crowded around him but he told them they would have to come on his ship if they wanted the rum so fifty savages came on the ship and he gave them all the rum they wanted and in a half hour all the fifty were lying in the hold just as drunk as drunk could be. They lay that way all day and in the middle of the night the ship was sailing far out at sea.

CHAPTER II

In Virginia

In Virginia a ship had landed. The ship came from Africa with a load of slaves. They came to Virginia to sell the slaves and get a high price for them from the tobacco plantation owners.

THE COLONIAL FAMILY

*by Leo**(After reading Beard's account of colonial industries.)*

The mother and father were at home she working in

the house making tallow candles and all the clothes. Sometimes she worked in the field. The father worked in the field planting and sowing. The older son was a captain on a "slavey" going from Boston to the West Indies. After getting molasses and sugar he went back to Boston, exchanging his cargo for rum. Then he went to Africa and bartered his cargo for slaves and went to the West Indies and got molasses, then repeating the whole thing over. The younger brother helped his father. The daughter helped her mother.

SOME WITCHCRAFT

by Polly

(After reading chapter in Fiske's New England and New France.)

Ritter Smith swore at the Hamilton children for something. Martha, the oldest immediately fell down in convulsions. The other children seeing the game, followed her. Two children crawled on the floor and made noises like cats and dogs. The other two danced around and screamed. When they were scolded they accused Ritter of bewitching them. They went on until they really thought themselves bewitched.

Ritter was sentenced to die, and was hung.

Six years later Martha confessed she did it at first only to keep from being scolded, later on she really believed she was bewitched.

TWO LETTERS

by Harry

(Letter from a son in the Colonial army during the French and Indian Wars to his father at home in England.)

Dear Father,

I am writing to you after our disastrous defeat. The

Indians killed seven hundred*of our men and out of eighty-six officers we only have twenty-three left. Our general had five horses shot under him and was climbing on his sixth when he stopped a bullet in his neck. Two colonials carried him off. There was an officer of the colonials who said to his men, "We are lost" which was a very bad thing to say but he could not tell a lie. The Indians and the few French officers are certainly not gentlemen. They fight behind trees, they yell and scream and are half drunk.

Love from your Son

Letter from a father in England to his son in the colonies.)

Dear Son,

Lately I have been hearing of trouble in the colonies. I hope that you will not join the rebels. And then this madman Pitt raving about your needs when the King has just repealed the Stamp Act. What these rebels need is to have their ports blockaded and go without food for a while. I am glad to hear the King has sent two regiments to Boston to keep them in order.

Love from your Father

CHAPTER V

MORE STORIES

All the group agreed with me early in the fall that they were weak in the form of their written English. They asked for drill in spelling, but I suggested instead regular practice in writing up history topics, science experiments, and original stories with subsequent study of misspelled words. A special period for this work was set aside three times a week, but, of course, as interest in the stories grew more time was taken as needed.

Catherine was the first to become absorbed in writing an original story called *The Fire Country*, inspired, she said, by reading a story of prehistoric life. She rewrote the last part several times to try to make it come up to the beginning, and put so much real feeling into the work that she could not bear to read it aloud to the group. "I'll read my history stories, but please don't ask me to read my own story," she pleaded.

Marshall, on the other hand, was always eager to share his original stories with the group. He tossed off one day a delightfully vivid short word picture of a salmon leaping a water fall, introduced by the matter of fact beginning, "Once there was a water fall one hundred feet high." I exclaimed over the inappropriateness of this and he discarded it in favor of a new beginning that did fit. Then,

on rereading the whole aloud to me, he remarked himself that it seemed to "die out at the end," and asked how he could prevent this. I told him that that was his problem to work out, but did start him thinking about what would happen to the salmon as it reached the top. He exclaimed at once, "I know how to do it," and wrote the new ending included in the story as given in this chapter (page 62).

One day in class Bob wrote a primer story in which he was intensely interested. He knew just what he was doing and followed a definite pattern as well as definite principles about frequent use of the same words and occasional introduction of new ones. His mother's recent work on a primer was responsible for this interest. He took it home to try on his younger brother and reported that it was "just right because he can read it; but he has to work over the new words."

Edward made the most striking progress of all in the technique of his written English. After his discussion with me of his difficulty in starting anything and his voluntary decision to write each day, he went regularly every morning to the library by himself to work on a story. When he had finished he asked me how to spell certain words, made his own sentence division, and copied the whole into his note-book.

By January all had become so interested in writing that it seemed impossible to find time in school hours both to write and read aloud the stories. Accordingly, I asked everyone to write something each day for home work. This was done not only without protest, but with enthusiasm. Some stories were continued from day to day. I returned all finished stories for corrections, underlining the misspelled words and other technical mistakes, and the final

corrected form was copied in ink into a note-book, if considered by the author worthy of preservation.

Paul made more improvement in spelling under this home work regime than in any other way. He reported that he had used the dictionary extensively. Far from losing in spontaneity by this effort, his home compositions were the most lively and original ones he had ever produced.

Edward brought in daily short narratives of personal experiences written with facility and careful work on spelling. None of them was very interesting in content until Lincoln's Birthday, when the parents were especially invited to visit the school. The class had commented the day before on the fact that there might be visitors present when the time came to read their stories, and all were eager to have good ones for the occasion. No one hesitated about reading his story aloud as usual, though the room did happen to be full of visitors.

When Edward's turn came, he read with evident enjoyment a long and carefully worked out story of a dream. Its consistently fantastic quality was so realistic that I was not surprised when he volunteered later on that he had actually dreamed it several years ago. He spoke with feeling of the horror of the real dream which he said was "much worse than this." He said that he had sat up till twelve o'clock the night before to write this story, and the writing of it seemed to give him a tremendous sense of release.

Bob had found writing more difficult, perhaps, than anyone else until he became launched on a continued story he called *On the March* dealing with the adventures of some Arctic explorers. Although the details of the story are fiction, the setting is taken from his reading of Nansen,

Peary, Kane, and Stefansson. "Nansen is a way better writer than the others," he told me enthusiastically, and often he stopped his writing to consult this favorite authority for information he wanted to introduce into the story. He worked out carefully from the map exactly the latitude and longitude in which the various adventures took place and picked out for an "Eskimo hunting ground" a spot he found to be free from glaciers.

This story was a genuine expression of the interest in Polar exploration which absorbed Bob all during the year, and frequently he sat writing in a corner while scene painting or other active work was going on in the room. He brought me each new instalment for help in spelling corrections. He copied the corrected version into his book in ink, often making changes in the language as he did so. As the story was still unfinished at the end of school, he insisted on taking it home to work on it during the summer.

Edward, too, worked with enthusiasm all the last month of school on a long continued story. He asked quite abruptly one day if he might go to the library to write, but came back after some time with nothing started, saying he could not think how to begin. He had the whole outline in mind, however, and knew he wanted to write it in the first person as the story of a child who was taken to South America and brought up by a gorilla. A second period by himself in the library saw him launched. He said that he could write better at home than in school so I encouraged him to work on composing his story over night at home and to spend school time on the technical work of correcting and copying. Like Bob, he stopped at times to look up information he needed, as, for instance, whether gorillas

slept on the ground or in trees. He was quite radiant all the time while in the grip of this inspiration.

All the stories included here are given with corrected spelling, but without change in construction. Unconventional capitalization when intentional on the part of the author has been retained.

One group of stories reflects the universal interest in the content of our play, so is appended to the chapter on dramatics instead of being included here.

THE FIRE COUNTRY

by Catherine

One cold cold night when everything was still and everyone was asleep, and the wolf howled and the tiger roamed the wild and gloomy forest, the chief's son was troubled by a dream.

He could not sleep.

He rolled and twisted on his mat of fur.

He got up and dressed himself and took his bow and arrows and went into the black black forest.

He was not afraid of Wolf or Tiger but went deeper and deeper into the black black forest.

He did not know where he was going. But he ran on and on.

His shadow fled across his path.

The night was still.

The moon threw her shadow through the tree tops.

Suddenly he stopped.

In front of him he saw fire, fire coming out of the ground!

On he ran.

The flame seemed to open to let him through.

He ran right through.

In the morning when his mother and father found that their son was gone they mourned as for one dead. They

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are always waiting for the day when they shall see him.
But the day does not come.

THE WATER FALL

by Marshall

The water leaped from the crag and lashed to foam at the bottom. I saw a blue flash in the foam. It was a salmon leaping the fall.

It arched its back as it leaped and swam with all its might.

At the top in swift water the sun struck its back as it flashed into the shadow of the overhanging bank.

ON THE DESERT

by Ellen

Across the desert came a train of camels with heavy loads. For a rich merchant was traveling. He sat upon his elephant which walked in a slow and stately manner. The sand was hot, the sun shone. They all longed for water and palm trees to eat their lunch under and rest before they went on. One saw an oasis. The long train drew up under the trees. And all dismounted and ate and drank under the trees, the animals then drank. They then mounted again and went on. Soon they were lost in the distance.

A STORY OF THE SAGUENAY RIVER COUNTRY

by Ellen

(After reading Maria Chapdelaine. See page 35.)

The wind blew hard. It was quiet. The ground was frozen. Along the road came a squeaky carriage. It stopped; a voice called out: "Tremblay." A pause. At

the door appeared a figure wrapped in furs. "Yes." "Here's your carriage," was the answer. Tremblay got into the carriage, the other man got into his seat, and they went off squeaking into the distance. All was quiet again for a while until a man passing knocked at a door. A woman called out from a window, "Yes, who is it?" "Louis," was the answer. "You! well, well!" The door was soon opened and the man entered; it closed again. All was quiet.

It started to rain.

No more was heard.

OUT TO SEA

by Ben

Splash, swish, swish. The swift clipper carried a dog's bone in her teeth of white foam, and left a path of bubbling water behind. The wind howled through the rigging on a fresh October day. The water was blue with white crests. The porpoises played about the ship. A whale spouted in the distance. The ship sailed on dipping through the waves.

HORSE RIDING

by Bob

(See explanation of this on page 58.)

Once upon a time Bob rode a horse. His name was Champion. It was a bay and black horse. He rode him up and down the beach and up and down the beach. Gallop! Gallop! Gallop!

Once upon a time Mr. Woodings rode a horse. His name was Apple. It was a bay and white horse. It was a peppy horse. He rode him up and down the beach and up and down the beach. Gallop! Gallop! Gallop! Gallop!

Once upon a time John rode a horse. Her name was Sil-

ver Tail. It was a grey horse. It galloped when all the other horses trotted. He rode it up and down the beach, up and down the beach. Gallopy! Gallopy! Gallopy!

Once upon a time Adam rode a horse. Her name was Lily. It was a bay horse. It could never keep up with the rest of the horses. He rode up and down the beach and up and down the beach. Gallopy! Gallopy! Gallopy!

Once upon a time Paul rode a horse. Her name was Queeny and she was a bay horse. It wanted to go where there was soft sand. He rode her up and down the beach and down and up the beach. Gallopy! Gallopy! Gallopy!

Once upon a time Arthur rode a horse. Her name was Wildflower. It was a roan colored horse. It would kick at all the other horses. He rode her up and down the beach and down and up the beach. Gallopy! Gallopy! Gallopy!

A SHIP AT SEA

by Marshall

CHAPTER I

The Start of the Voyage

The waves rolled sluggishly on the beach with a dull roar and swish.

A ship was riding at anchor in the bay. She was about to put to sea.

Early next morning the squeaks of the winch came faintly to the shore as the anchor came up.

The ship got under way with the screech of blocks and hauling of ropes as the sails went up and bellied in the breeze.

The ship sailed calmly out into the open sea and took the heavy swell of the big Atlantic. Her bow cut the waves in two as she skimmed over the water bound for England with a cargo of iron nails under her hatches.

CHAPTER II

The Storm

On and on sailed the ship before a southwesterly breeze.

One day the wind veered to the northwest and the sky became cloudy in that quarter. Thunder rumbled in the distance and lightning flashed far away, but the storm was coming on fast.

The captain shouted orders and the crew obeyed, all sail they dared keep on was reefed but even then the ship scudded on at a terrible speed.

The storm was upon them; the wind howled in the rigging and the waves dashed on the deck with terrible force. The lightning cracked in blinding flashes and the thunder roared and rumbled and cracked again.

The top-sail broke loose with a report like a cannon. Then came cracks like pistol shots as the strips of canvas beat against the yard.

The rain was coming down in torrents, but some of the crew climbed aloft like monkeys and cut the pieces loose.

One man was washed overboard as he stepped from the rigging to the deck.

The fore-mast snapped and the look-out was hurled out into the raging spray and foam never to be seen again. The rigging was whipped about in the wind but at last was cut free and with the top of the broken mast was thrown out into the leaping waves and lost to sight.

The crew were drenched and their hands were bleeding from clinging to the rigging and masts but they fought on until evening fell and the wind eased up but the sea still rolled and lashed and the rain still fell. The watch changed and those who had battled had a chance to rest.

The storm raged on but it was going down fast and seeing this the captain put on more sail and the ship fairly flew over the waves.

CHAPTER III

The Arrival

At last the storm died and the sea grew calm.

On sailed the ship until finally port was reached and the ship dropped anchor in the bay.

The stern port officers came aboard in their smart uniforms and inspected her papers.

The crew were happy and went about their business with light hearts and gay voices as they climbed the rigging and fixed the huge derrick that was to hoist the heavy cargo ashore. At last it was fixed and the big rails began to come up out of the hold and cross the narrow space of water and were let down slowly to the huge dock.

Trucks were rattling to and from the dock and everything was busy and bustling.

At last the cargo was unloaded and stacked on the dock.

The ship was to be overhauled at once and then go back to America.

TWO STORIES

by Paul

I

(Mr. Paley is the school science teacher and Mr. Kusner the mathematics teacher.)

Once upon a time there was a little boy.

And this little boy had a little watch.

One time the little boy's watch stopped!

The little boy took it to all the watch makers in town.

But none of them could fix it.

But then some boys from the City and Country School came along.

They looked at it and said: "We cannot fix it either."

(Of course no one expected them to.)

"But," they said, "we will take it to the two *smartest*

men in the world. *Mr. Kusner and Mr. Paley!!!* They will surely fix it." So they took it to *Mr. Kusner and Mr. Paley*, the two *greatest* men in the world.

Mr. Paley put some chemicals in it.

Mr. Kusner did a bunch of figuring and fiddled a little.

And . . . Behold . . . The Watch Went!!!!!!!!!!!!!!

Tick! Tick! Tick! Tock! Tick! Tock! Tock! Tock!
Tock! Tick!

And the boy was very happy.

II

One fine day Mr. Paley said, "I have brought to school a slide ruler which measures distances, but I do not know how to work it even though I am one of the two *greatest* men in the world."

Mr. Kusner, the other of the two *greatest* men said: "I will figure it out!!"

He took it home with him and when he came back and we asked him how it worked, he said: "I, one of the two *greatest* men in the world, have not yet found out; I did not have enough time."

During the week we said nothing about it, but on Friday we told him to take it home and figure it out. Nothing doing, he came to school on Monday and said: "I forgot that I took it and left it in my pocket, here it is. But if you want you can make one yourself," and he showed us how. And we made it before he figured the other one out. (He is always forgetting it because great men have bigger things to think about.) Well, two weeks have passed and the slide ruler is still a mystery. So far one of the great men has failed.

MY ADVENTURE

by Polly

I awoke in the morning, and ahead of me was the island to which I had come for adventure. There were

red, grey and black dragons as high as high hills. There were more than a thousand. The sky was black, the island was black. The dragons were vomiting black smoke.

I landed.

Then I started walking around. All of a sudden I heard a roar, above me was a huge serpent. Then I came to a cavern bearing an inscription like this—ENTRANCE. I looked down and heard a noise.

Then a green thing came down upon me. I hid my face, then a man picked me up and said, "If you don't get scared I'll give you a bus ride free."

THE HUT IN THE CLEARING

by Catherine

A hut stood in the clearing.

Bare trees on all sides.

The ground was covered with snow.

The sky was dark; the moon shone clearly.

Through the windows you could see a bright fire. A lady sat in front of the fire. Two children sat at her feet; she was reading to them. In the other corner sat a man. He was peacefully smoking a pipe and listening to the story.

A PICTURE

by Catherine

Sand stretched on all sides.

Not a green tree in sight.

Just sand, sand, and the blue sky overhead.

No bird's song could be heard.

Not a sound broke the dead silence.

NEW YORK—COUNTRY

by Ellen

The sun shone. Green grass all around. Not far off was the beginning of a small forest. Birds circled around

the tree tops. A dusty road wound off into the hills. A cool breeze blew.

"Ba-na-nas." "Straw-ber-ries."

Hot and dirty. Children playing in the gutters. Men selling fruits and vegetables. The factory whistle blew. "Ba-na-nas."

WORD PICTURES

by Mary

The clouds floated lazily by,
The fir trees swayed gently in the breeze.
Some crickets chirped.
A robin lighted on a stalk of grass.
Soon he was off.
All was quiet.

A cloud gathered in the North.
It came hastily onward.
Some birds flew overhead.
It rained hard,
Then harder and harder.
It was over in an instant.

A DREAM

by Edward

One night as I was gazing at the ceiling with my head on a hot water bag I had an awful dream.

This is my dream.

One fine day in March the Queen of New York City had died and there was going to be a funeral that afternoon. My mother and my sister had gone to the funeral. I was going too but I had not finished my dinner so they went without me. But I left my house fifteen minutes later and went straight to the church. When I got there I had the surprise of my life. Everybody had a chain around their hands and legs and there were a lot of guards

standing around. When they saw me one of them walked over to me and took me by the collar and led me down to one of the front seats and chained me there before I had gotten over my surprise. When I looked up on the platform I saw the Queen in a baby carriage and a dish that had dynamite in the bottom of it and four sweet potatoes on top, and the dynamite was smoking.

Then I remembered I had a knife with a saw and a screw driver and a blade that was three inches long. I got out my knife and opened the screw driver. Then with great difficulty I unscrewed one of the bolts that held the chain down. When I got through I was so tired I could hardly get it out. When I finally got it out I could get out of the chain and I did.

Then I got up on the platform and cut off the fuse of the dynamite just in time to save the church. Then I looked around for my mother and sister. One of the guards was almost on me, but he did not see my knife. Just when he was going to take me back I stuck it in his heart. Then the police came in and arrested all the guards and set the people free. My mother was almost dead with fright and my sister had fainted. Then I woke up.

STORY BY EDWARD

CHAPTER I

How My Life Began

In Canada long, long ago, I had a wicked father who wanted to kill me.

One night about nine o'clock a friend of my father's came and they had a long talk.

This friend of my father's was a big muscular man, he had dark brown hair and huge feet. Altogether he made a hideous appearance. The next day everything went as usual.

But that night just as I was falling asleep I heard a noise at my door. My father came in and held a bottle

under my nose and said, "Smell the perfume my friend brought me." I tried to sit up but I could not.

I had smelt chloroform once before in my life and this smelt just like it. I tried to stay awake, but I could not. When I woke up I heard the rumble of wheels and the hoof beats of horses.

I soon discovered that I was in a closed carriage.

After a while the carriage came to a stop with a jerk, and I heard a man say: "Are you sure this is the steamer to South America?"

And the driver said, "Yes, and she sails in the morning."

CHAPTER II

My Adventures on the High Seas

I was nine years old now. The man I was with told me my mother and father would meet me when the boat landed, and I was foolish enough to believe him.

I cried all the first day, and in the evening I fell asleep.

When I woke up and looked around I saw the man drinking out of a black bottle and he was patting his stomach.

When he went out of the room, I jumped up and got dressed. When I went out to look for him I found him in a dark corner drinking out of the black bottle again.

In fifteen minutes he could hardly stand up. He lit a cigarette and began to stagger around the deck.

He threw the cigarette up in the air and tried to catch it in his mouth. The cigarette came down and when it landed in his mouth it burned his tongue.

He took it out and uttered a cry of pain. Then he threw it in back of him. It happened to land on a pile of blankets. The cigarette had just enough life to set the blankets on fire.

The blankets flared up and before the officers could put it out it caught on a pile of steamer chairs.

Some of the women were screaming and two of them jumped overboard, but were never found.

In half an hour the fire was out, but they had lost several hundred dollars.

Everything went all right the next day. But the look-out reported a storm from the North the next morning. They tied everything down and prepared for a big storm.

The man that was with me was put in irons because he set fire to the boat. Another man came to my room and I liked him much better.

Every day he went to visit the man that was with me before.

We were ten miles from land now and the storm came nearer and nearer. There were big flashes of lightning and the rumble of thunder.

I was frightened and did not know what to do. I could find the man I was with nowhere, so I went to my room. I found him there putting a package of paper money in his pocket. He had a life saver around his waist. He rushed out of the room and I followed him. He went on deck and still I followed him.

There was a big flash of lightning. Bang! Crash! The foremast of the big ship fell, it went through the aerial of the steamer and smashed the cabin to splinters.

Down in the fire-room the water was pouring in and the men were all fighting to get on deck. People were jumping overboard, the officers were crying, "Women and children first."

Two men were trying to get into the life boat, but an officer stopped them.

They put up a big fight and the officer had to shoot one of them. The boat was sinking lower and lower. The waves were coming over the deck and washing the people and officers overboard. I was holding on the rail and had almost fainted. All I remember after that someone grabbed me and got into a life boat.

When I came to I found that I was in a life boat with the man I liked so much.

The steamer went down and so did the man that set fire to the steamer.

We were in sight of land and everybody was taking off their life preservers.

CHAPTER III

My Adventures in South America

The man that was with me told me his name was Jack.

I asked him where my mother and father were and he said, "I never said anything about your mother or father."

Then quick as a wink he grabbed me and held a bottle under my nose. I cried and yelled, but to no account. I soon fell asleep.

Just as I woke up I went under water, when I came up, Presto Chango! I was a baby.

The next day Jack got a rifle and a horse and a lot of food and wandered around the town asking a lot of questions about the roads and jungle.

Meanwhile I was tied up in bed and had had no food all day, but I finally fell asleep.

When I woke up I saw Jack putting on a heavy oil-skin coat, and you may be sure he looked funny with his red hair.

He had a pistol and a big hunting knife in his belt.

Two hours later I was strapped to the saddle of his horse. In another two hours we had started for the jungle. For to-day nothing happened worth writing about. The third day about noon as we were passing a big tree Jack stopped and took me down from the saddle. He put me down on the ground and took a package from the back of the saddle. When he opened it I saw that it was food.

As we were eating or rather he was eating and he was feeding me, a big rattle snake came and took a pickle before Jack saw it. The rattler was in a pickle then for Jack got out his pistol and shot at his head, but missed

and cut the pickle in half. He shot again and when I looked at the rattler he had a hole in his head.

When Jack got down he calmly took out his cheese dagger and was about to rip me open when he heard a half moan and half howl in back of him. A gorilla jumped out with a cocoanut on his head.

Jack jumped up and pulled half of his hair out before he got his senses back again.

He threw his knife at him but missed.

It was lucky for him that his horse was near or he would never have gotten away alive.

CHAPTER IV

My Life with a Gorilla

As soon as Jack was out of sight, and he went quick enough, the gorilla came over to me and poked me and pinched me, then she licked me with a rough tongue.

She picked me up and carried me to the big tree, then she climbed up the tree. When Mr. Gorilla came home and saw me he came over to me and was going to bite me, but Mrs. Gorilla stopped him.

That day the gorillas moved to a higher tree.

They got some old but strong branches of trees and laid them on other live branches on the big tree, then they put moss and leaves on top of that and they had a nice house.

Fifteen years passed and nothing happened.

All the gorillas hated me because I was not like them, all except the gorilla that had found me fifteen years ago. I had found the knife that Jack had left and made good use of it.

I could not climb trees like the gorillas did and I did not have a tail then, but I am writing one now.

There were five gorillas that hated me more than all the others.

Somehow I remembered the name Jack, but I never could remember where I heard the name.

I named the mother gorilla Jack. After a while Jack seemed to understand that when I said, "Jack" that I meant her.

One night ten days later the five gorillas that hated me so much came over to our tree and started to climb it one at a time.

As the first one came up Jack saw him and growled. The gorilla made no reply but came at me.

Jack who was watching uttered a loud yell and jumped on his back and buried her teeth in his neck.

I got my knife and ran and climbed to the trunk of the tree and killed the next one that came up.

The other two came up at the same time and one jumped on my mother.

Jack had killed the first gorilla but she was tired now and did not put up much of a fight.

The gorilla killed her and then I buried my knife in his back. The other one ran away.

I did not know what to do.

I walked up and down, up and down beneath the tree. When I got tired I climbed up the tree and fell asleep. That night I had a funny dream.

I dreamt that I was in a place where there were no trees or grass, there were a lot of high things that were made out of a lot of little things that were red and some were yellow.

There was a lot of noise but not the kind I had heard in the jungle.

The high things had a lot of things that looked like eyes and they were all in a row. One row was on top of the other.

There were big windows with lots of things I had never seen before. Just then I woke up and the sun was shining.

I got up and looked around and when I saw Jack dead it gave me an awful shock.

I ran over to her and tried to lift her.

I could not and began to cry and say, "Jack, Jack,

what is the matter, Jack?" Then I saw that her neck was covered with blood.

I almost went mad.

My mother was dead and if the other gorillas saw me they would kill me.

I covered Jack up with moss and leaves and left her there.

I thought of killing myself, but when I thought about it for a while, I decided not to.

I wandered off and thought I would find another place.

I could not forget my dream. All that day I thought about it and wondered if it could be true.

I could not speak English nor could I understand the gorillas.

The only English word I knew was Jack.

As I was walking along I did not observe a panther getting ready for a spring.

I got out my knife and looked at it.

When I was five years old I had found it on the ground. In the handle there were five little letters that I did not understand. I had looked at it often.

As I was gazing at it I heard a noise in a tree above me. I looked up and was just in time to see a black streak flying through the air at me. I tried to dodge it but I was too late.

The black thing landed on my back and knocked the knife out of my hand.

As I was going down I felt sharp claws stick in my back.

After that I did not know enough to see what was going on for my head hit a piece of wood and almost stunned me.

I felt the breath of the panther as he stood over me, then I heard a fierce growl and a gorilla jumped out of the bushes.

The panther turned around but did not move.

The gorilla advanced slowly watching the panther all the time.

The panther got ready for a spring, when the gorilla was five feet away. Both animals were growling all the time I was gaining consciousness.

The panther made a leap at the gorilla, the gorilla was big and strong, but did not get out of the way in time. As the gorilla went down the panther tried to bite the gorilla in the neck. The gorilla put up his hand and the panther bit it and paralysed it.

The gorilla fell on the ground and his hand fell on a piece of wood.

He picked it up and tried to hit the panther on the head. He missed the first time but the next time he hit him on the head and stunned him. Meanwhile the panther had buried his teeth in the gorilla's neck. Then the whole world fell on his head. The gorilla tried to get up but he could not. The blood was pouring out of his jugular vein.

I had regained full consciousness now and I got up and found my knife.

The gorilla was trying to yell, but his mouth was full of blood and he could only make a low gurgling sound.

My heart was full of pity for the poor animal and I buried my knife to the hilt in his heart.

Before the panther came to his senses I buried my knife to the hilt again.

Then I cut his head off and let the blood run. After that I skinned him and made a cover to keep me warm.

I had not had a new skin for a long time, but I had a new pair of shoes that were made out of deer skin.

I stayed there that night and had some panther meat for supper.

The next day I woke up and looked around for Jack, then I remembered and almost cried.

I wandered on and on for five days and the jungle got thinner and thinner. The sixth day I came to a path; I

followed this for one day and all of a sudden I felt something whiz past my head and then I heard a big bang.

Something hit my arm and I heard another bang, then I let out a yell so loud that it almost was as loud as the bang. I fell down and fainted because I could not stand the pain.

When I woke up I was in a big place that was white and had four walls and a roof.

There were a lot of white things with four legs and a lot of them had people on them, and they were comfortable and very clean, and I must say again that they were comfortable because they were very, very comfortable.

CHAPTER V

I Come Unto a New Life

When the doctor came in he saw that I was awake and came over to me and said, "How are you feeling?"

Of course I did not know what he said so he repeated it and I said, "Tute la casa la mon jara."

He sprang back in amazement and said, "Why child you've lost your head." I tried to sit up but fell back with a moan. My arm was in something white and it was hard as a brick.

Ten days passed with all kinds of things going around that I had never known before.

I had learned to speak now, but I could listen better.

I had been adopted by the man that shot me in the jungle.

He told me that as he was hunting he saw me and thought I was a panther and I looked like one with the panther's skin on.

He said after he had shot me and I fainted, he took me to a hospital.

That night as I was looking down at a piece of dynamite I began to cry.

One tear happened to land on the end of the fuse and that ended my life for it blew up and went into the air, but I was so strong it did not kill me.

But I am very sorry to say that I had heart failure while I was in the air and died. When I came down I hit the ground so hard that my soul was knocked out and it went to heaven.

I wrote this story in heaven and sent it down by an angel and told her to say, "The end."

STORY BY BEN

(Beginning of a long, continued story which when typed exceeded five pages and was still unfinished when school closed.)

It was five o'clock when we started to the front firing lines from a little town in France. I forget the name, or I never knew it, to be truthful. We got on the train and were soon going on at a fair rate of speed. We sped through a lot of small towns. We got a fleeting glance at the narrow streets and low little houses. A lot of people standing in long lines were watching the trains pass full of soldiers. Our train didn't stop there at all. It wasn't stopping till it put us where it wanted us. For hours we rode and rode. We began to see towns all blown to pieces with great shell holes in the ground, and the cellars all shot to pieces and the ruins of houses all blown to pieces. About 2 o'clock we came to a halt at a certain place, a station, and our regiment got out. No sooner had we set foot on the ground my buddy and I, than we got bawled out by the sergeant for not saluting him so we had to do it along with a lecture. The rest of that day was spent in unloading ammunition and getting guns for the trenches and long range rifles, hand grenades and the like.

ON THE MARCH

by Bob

(Beginning of a story which when typed filled ten pages.)

Once upon a time I was walking on top of a forty foot pressure ridge. I stopped. I thought I heard something. What was it? A mumbling groaning and booming sound way off in the distance. The dogs began to howl, the poor brutes, they were so scared, the sound got coming nearer, and nearer all the time. We cooked our supper, crawled into our stiff sleeping bags all saturated with the snow and ice we brought in on us. All of a sudden we heard a great boom. The great blocks of ice which were on the pressure ridge were rolling down. Luckily we were about a hundred yards away. We could not sleep. Crash, boom, crack, boom, boom, we could feel the ice under us tremble. Another great pressure ridge was being formed. At last the disturbance died away.

(Very quietly)

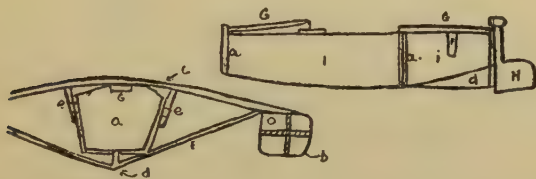
Boom, bang, moan, crash, and we could sleep in peace. I was cold and I shivered in my bag. The next morning there was a wide lead which barred our way. It was about fifty feet across. The temperature to-day was 23 F. There was a slight breeze from the E. S. E. I took observations to-day with the sextant which indicated 35 degrees 58' 14" West longitude, 87 degrees 48' 16" North longitude.

FIRST LESSON WITH THE KAYAK

by Bob

After we got done with the first kayak we took it down to Long Beach to try it out. I got in it with my rubber

boots on and sat down in it. Mr. Woodings held it and I tried it, but it was too narrow to hold me out of the water and Mr. Woodings had to hold it from getting water inside it. So then the next day Adam and I got some big five gallon cans (two of them) and fastened them on like this:



- | | |
|--------------------------------------|---|
| a. solid wood rib. | e. 6" pieces of wood screwed into the sides |
| b. 5 gallon can | f. rope |
| c. $\frac{7}{8}$ by 2" piece of wood | g. tip piece of wood |
| d. keel | h. rudder |
| | i. wooden sides |

Next day we tried it with the outriggers. Of course it made very slow progress, but it would go on without tipping over. It was very cold and even the salt water that was in the boat froze and when we paddled the water ran down the double paddle and so we fixed it by putting tarred tape on.

After we tried it for a while in the bay we stopped and put the kayak in for storage for the rest of the winter. In March the weather became milder and we finished another kayak which we had half constructed three months ago. After we finished it we shipped it down to Long Beach. We took off the out riggers of the other kayak, fastened them together with two 4 by $\frac{7}{8}$ inch pieces of wood; one 2 by $\frac{7}{8}$ inch piece like this:



We now put a sail on which was four feet high, five feet wide, the mast six feet high. It also had a bamboo spar on it. And fixed it so that we could raise and lower the sail. Now it was finished. We carried it down to the bay to try it. It was fast compared to the one kayak. We went across the bay and back paddling because there was no wind. The next day was rainy. The next day was fair but windy. We took our kayak down to the water's edge to hoist up the sail. Adam got in it. I held the kayak. All of a sudden, puff! The double kayak was a hundred feet out in the bay. Adam lowered the sail and paddled back to shore again. Adam and I fixed it up again and paddled out again. We fixed the boat so it would go with the wind and sailed off. The bow wave almost came over the sides. We went so fast that our little double kayak caught up with the waves. The bow went in two feet into the waves we caught up with. At last we came to a stop and hauled our boat up on the shore out of reach of the tide. It was too windy to sail back. The next time we took the kayak out was two days later. There was a slight wind from the Northwest. We hauled her to the water (it was low tide), hoisted the sail and went off across the bay and back again, to ask Mr. Woodings if we could go up the bay. He said, "Yes," and we did. The wind was with us.

The tide was not, but just as we turned back the tide turned and that meant the wind and tide against us. We tried to tack, but could not and so we had to paddle back, and put the kayak in storage under the house.



CHAPTER VI

OTHER WORK IN ENGLISH

The writing up of science and history note-books and original stories with correction afterwards for spelling, capitals and sentence division, together with special study of misspelled words, formed the basis of work in formal English. Sometimes I dictated sentences containing the words collected from their stories for home study; sometimes the children themselves put these words into sentences of their own which were afterward analysed for special merits and defects.

They asked to learn something about grammar, so we included a little practice in discovering in their own sentences subject and predicate, phrases, compound or simple sentences, and especially the different parts of speech as well as their functions.

Nearly everyone in the group seemed afraid of the spelling of words with many syllables. They often left out whole syllables entirely, so I gave them at times some practice in building up new words from words already learned, as, for instance, family, familiar, familiarization. They enjoyed this immensely, and did develop some general ideas about the habits of the language, though Paul often sighed over the "crazy, crazy language" as compared to the phonetic spelling of Russian or German, both of which he knew. This led, too, to some

investigation of word roots and the meaning of prefixes and suffixes. When the meaning was not obvious, individuals looked up different words in Skeat's *Etymological Dictionary*, and reported their discoveries to the group.

Edward asked me one day for poetry to read in the noon rest period and said that he did not care what it was about, but he liked it for the sound. This led to my asking the others if they cared for poetry, and they were all quite enthusiastic in their response.

They remembered with especial pleasure the Shakespeare plays they had read aloud in Miss Garrett's class the previous year, but they were interested in my suggestion that we try some modern poetry also. We asked Mrs. Mitchell to come in one day and read some of this poetry to the whole group. She began with Gibson's *Machine* and another poem by him about two miners. The next week she read Sandburg's *Fireman's Ball*, and *Humoresque*.

All were enthusiastic and invited Mrs. Mitchell to come regularly one afternoon a week to read to them. This she did for the rest of the month. She read several Masefield sea poems, and in addition to the modern poetry, read *Horatius at the Bridge*, *The Ancient Mariner*, and Holmes' *One Hoss Shay*. The last she offered especially as a suggestion for the Never Bust Toy Company, and its humor was thoroughly appreciated by them. Catherine was most eager of all for this poetry period, and told Mrs. Mitchell that she would stay to listen just as long as Mrs. Mitchell would read.

After Christmas the group was still eager to go on with the weekly readings, so I read aloud Masefield's *Dauber*,

taking two successive days to finish it by special request. Marshall commented often, "That's great," but Paul was sad over the unexpected tragic ending, "That's not so good. He ought not to have died." Marshall called attention to the difference between the way the sailors talked about him after his death and the way they talked to him when he was alive. He added, "It's different from most stories. They usually turn out right."

A notice came to the school about a special dramatic performance of Dickens' *The Tale of Two Cities*. As a result the group became interested in reading aloud the story before seeing the play. When I asked how they liked Dickens' style of writing, Paul spoke for all in saying, "It's good when you read it aloud, but I could not get interested by myself." All were intrigued by the growing elements of mystery, and hoped that Dickens would "remember to explain it all in the end."

The reading was accompanied by much discussion of all the characters and some comparison of the French Revolution with recent happenings in Russia. No moral judgments or controversial opinions entered into this any more than they did into the coal strike discussions. The interest was rather in understanding and interpreting events and characters. Marshall missed much of the reading aloud, as he was on a special rest program because of his marked underweight, so he read on to himself. However, he often joined the group on his return and enjoyed listening even to parts he had read. Evidently they all missed something in reading to themselves that they enjoyed in group reading.

The play itself proved disappointing to all of us. Bob objected that "they skip too much, the book is better."

Paul disliked the liberties taken with the character of Defarge, "In the play he seems like a crook." Mr. Lorry's character also brought out some discussion, and they disliked the comic aspect given to it. After the play I said nothing about finishing the book until the request came from Paul backed up by the rest "even if we do know how it turns out." We read it aloud every day for half an hour after lunch, sometimes longer if nothing else was planned for the afternoon. In the latter case, Adam always left at the end of half an hour as the shop was open then, and Bob would sometimes go to the library to read his own book of Arctic travel.

When we finished *The Tale of Two Cities*, all the group begged to continue the daily reading aloud. We decided to read one of Shakespeare's plays, letting each person read a part as was done the previous year. *Midsummer Night's Dream* was asked for and parts chosen. Anne, Marshall, and Polly proved the best readers and were equal to the most difficult parts. Only Bob and Edward were really poor at reading aloud. Interest was so high that we often read on over the period planned. Not until the very end did anyone lose interest. Then Catherine and Mary became disgusted by what they considered the "silliness" of the Pyramus and Thisbe players. We discussed somewhat the writing of burlesques and parodies, especially as Leo had that morning brought in a story written as a burlesque of scientific terminologies. Shakespeare's caricature of alliterative writing was also noted and enjoyed.

At another time I read aloud *The Courtship of Miles Standish* in connection with our study of the beginnings of New England. The whole group enjoyed that, but,

when I tried *Evangeline* the boys became restless, so I gave it up.

I suggested one week that instead of my reading poetry to them, each person should read aloud to the group some favorite poem. To my surprise the response was so enthusiastic that they could not wait until Friday, the day that I had assigned for the reading, but begged to start the program a day sooner. So many poems were brought in that we extended the program over two days and the interest was still high at the end. Edward's splendid reading of his favorite poem, *The Man in the Moon* by Riley, was especially commented on. The full list was as follows:

Marshall—*Ballad of Nancy Brig* (Gilbert)

Paul—*If* (Kipling)

Polly—*Ballad of Sir Patrick Spens*

Catherine—*Cargoes* (Masefield)

Leo—*Skeleton in Armor; Wreck of the Hesperus* (Longfellow)

Ben—*Private James* (Gilbert)

Edward—*Man in the Moon* (Riley)

Mary—*What Every Girl Knows* (from *The Janitor's Boy* by Nathalia Crane)

Anne—*The Christening* (from *When We Were Very Young* by Milne)

Little Orphan Annie (Riley)

Bob—*Ballad of John Silver* (Masefield)

There was a daily period for individual reading in the library for about forty minutes before lunch. Often some of the children went back during the afternoon for more reading. Sometimes they asked for help in selecting good

books as, for instance, when Catherine was fascinated by Padraic Colum's stories of the Greeks, and asked for more stories about them. I gave her Palmer's *Odyssey*. She liked it so well that she finished it in a week and asked for the *Iliad*.

Usually they made their selections for themselves from the open shelves, or on each other's recommendations. Often as books were finished, I asked for reviews of them to serve as a guide to others in the group, and the following are samples of some that were turned in.

BOOK REVIEWS

Reviewed by Polly

BEN HUR:

Ben Hur is a very exciting book about the time of Christ. There is a lot of description in it. But it is very interesting. It is about a boy who is sentenced to the galley for life. He is adopted by a rich man. Then he goes in search of his family. He finds them. They have leprosy. He brings them to Christ; He cures them.

Books reviewed by Catherine

SWEET WILLIAM:

It is quite exciting and it is a very good book for children that like stories of dukes and tournaments.

THE ISLAND OF THE MIGHTY:

Is very exciting and a good book for children that like knights.

THE GOLDEN FLEECE:

Is a good book for children that like Greek stories.

THE STRANGE STORY BOOK:

Is not so good.

MEN OF IRON:

It's a very good book and it is about the same thing as Sweet William.

THE WONDER CLOCK:

It's a good book for little children.

THE ODYSSEY:

Is a wonderful book. It's about a man that went to fight in the Trojan war and a storm wrecked his ship and he did not come home till twenty years later. He went away and left his wife and little baby. He was gone so long that they thought that he was dead. So all the men of the land came to woo his wife. But she would not marry any of them. She said that they would have to wait till she finished the web she was weaving. So by day she would weave and by night she would unravel. She kept doing this for three years till one of her ladies in waiting told. And she had to finish the web. He came home twenty years after and he and his son killed the wooers and lived happy till they died. It's the best book I *ever* read. Odysseus was the man, Telemachus was the son, and Penelope was the wife.

Books Reviewed by Ellen

MYSTERIOUS ISLAND:

A book of some castaways, five men and one dog and all the things they find out and very interesting toward the end mostly. Very good for people who like exciting books.

CASTLE BLAIR:

A very good book of five children and a dog in Ireland. It is sad near the end.

THE THREE MUSKETEERS:

Is in the time of Cardinal Richelieu. Most of the story is in France.

List of books from school library read by Group XII with comments on them made by individuals. This list does not include books read in the library, but not taken out on cards, and, therefore, unrecorded. Stars show those specially enjoyed.

CATHERINE:

ALCOTT: *Jack and Jill*

AUSTIN: *Pride and Prejudice*. "Did not finish. Will try it again."

BOUVET: * *Sweet William*

CATHERWOOD: *Story of Tonty*

COLUM: * *The Golden Fleece*

* *Island of the Mighty*

CHAMBERS: *Cardigan*

DIX: *Merry Lips*. "For a younger child but good."

DUMAS: * *The Three Musketeers*

* *Twenty Years After*

HUDSON: * *Green Mansions*. "Peachy."

JOHNSTON: *To Have and To Hold*

Prisoners of Hope

KIPLING: * *Stalkey and Co*. "Very good."

LANG: * *Strange Story Book*

MASEFIELD: *Salt Water Poems*

MEADER: *The Black Buccaneer*

PALMER: * *Translation of the Odyssey*. "Best book I ever read."

PARSONS: *American Indian Life*

PYLE: * *Men of Iron*

The Wonder Clock. "Too childish."

SCRIBNER: *Journal of Marquette*. "You ought to read it all aloud to us."

SCRIBNER: *Narratives of Explorers*

SHAW: * *Castle Blair*

STEIN: * *Little Count of Normandy*. "Very good."

TITMARSH: *The Rose and the Ring*

VERNE: *Mysterious Island*. "Good, read it with Mary."

WALLACE: *Ben Hur*

WATERLOO: * *Story of Ab*

WILSON: *Russian Story Book*

LEO:

ALTSHELER: * *Eyes of the Woods*

BOYD: * *Drums*

DUMAS: * *Three Musketeers*. "Very good."

GRAS: * *Reds of the Midi*

GREY: * *The Red-headed Outfielder*

KIPLING: * *Captains Courageous*

PAINE: *Privateers of '76*

POWYS: *Black Laughter*

STRANG: *On the Spanish Main*

TOM TOMLINSON: * *Pioneer Scouts of the Ohio*

WHITE: * *Blazed Trail Stories*

(Leo also reported reading many books by Scoville and Thompson-Seton which he got from a public library.)

BEN:

ADAMS: *Fenceless Meadows*

BLACKMORE: *Lorna Doone*. "Good story, but pretty dull."

BOYD: * *Drums*

CATHERWOOD: * *Story of Tonty*

CHURCHILL: *The Crossing*

COOPER: *The Spy*. "Couldn't finish it."

DICKENS: *Nicholas Nickelby*. "Finished it at home."

HAPGOOD: *Diary of a Non-Union Miner*

KAUFMANN: * *Ranger of the Susquehannock*

LONDON: *Adventure*

MARSHALL: *Cedric the Forester*

MASTERS: *Wonders of Salvage*

MEADER: *The Black Buccaneer*

McMURRY: *Pioneers of the Mississippi* (Chapters about LaSalle) "Worth reading aloud to whole group."

Pioneers on Land and Sea (Chapters about John Smith) "Worth reading aloud to whole group."

PAINE: *Privateers of '76*

PYLE: *Men of Iron*

ROOSEVELT: *Stories of the Great West*

SETON: *Rolf in the Woods*

SIENKIEWICZ: *In Desert and Wilderness*

PAUL:

ALTSHELER: *Eyes of the Woods*

BLACKMORE: *Lorna Doone*. "Unfinished. Gave it to Ben."

HAWES: *The Mutineers*

KIPLING: *Second Jungle Book*

LONDON: *Adventure*

MEADER: *The Black Buccaneer*

MILLER: *The Hidden People*

SABIN: * *With George Washington in the Wilderness*

SETON: *Wild Animal Ways*. "Good book. Picked out stories to read."

SCHULTZ: * *Apauk, Caller of Buffalo*
Questers of the Desert

STEVENSON: *Black Arrow*

STRANG. *On the Spanish Main*

TARKINGTON: *Penrod*

TITMARSH: *The Rose and the Ring*

TWAIN: * *Huckleberry Finn*. "Very good."

VERNE: * *20,000 Leagues under the Sea*

ANNE:

DIX: *Blythe McBride*

PYLE: *Robin Hood*

RANSOME: *Old Peter's Russian Tales*

SHAW: *Castle Blair*

SPYRI: *Heidi*

POLLY:

BRONTE: *Jane Eyre*. "Finished. No good."

DIX: *Merry Lips*

ETALBOT: *The Story of Natural History*. "Looked at the pictures."

HAWES: *The Mutineers*

HOLLAND: *Pirates of the Delaware*

HUDSON: *Green Mansions*

JOHNSTON: *To Have and To Hold*. "Did not finish."

KIPLING: *Just So Stories*

MEARNS: *Creative Youth*. "Like them very much."

PARSONS: * *American Indian Life*

PORTER: *Scottish Chiefs*

PYLE: * *Men of Iron*

RANSOME: *Old Peter's Russian Tales*. "Picked out some."

TARKINGTON: *Penrod*

VERNE: * *Mysterious Island*. "Good."

WALLACE: *Ben Hur*. "Good."

GEORGE:

ADAMS: * *Log of a Cowboy*

BEARD: *Boy Pioneers*. "Not so good."

CERVANTES: *Don Quixote*. "Unfinished, silly, nothing happening."

DODGE: *Land of Pluck*

GREY: * *Red-headed Outfielder*

HUGHES: ** *Tom Brown's School Days*. "Best of all."
* *Tom Brown at Oxford*

KAUFMANN: *Ranger of the Susquehannock*

KIPLING: *Captains Courageous*

LUCAS: *The Slow Coach*

MARSHALL: *Cedric the Forester*

MELVILLE: *Moby Dick*

PITTINGER: * *Great Locomotive Chase*

PYLE: * *Robin Hood*

TOMLINSON: *Pioneer Scouts of the Ohio*

TWOMBLY AND DANA: *Romance of Modern Inventions*

VERNE: *Mysterious Island*. "Anybody would like that.
Best of all!"

VERRILL: *Boys' Book of Buccaneers*. "Pretty good."

WATERLOO: * *Story of Ab*

BOB:

KANE: *Arctic Explorations*. "Good illustrations."

SCOTT: *Diary of Last Voyage*. "Good, but terrible monotonous."

(Bob confined his reading entirely to Arctic explorations all winter, and was chiefly interested in Nansen's "Farthest North" which he bought for himself. He was building up his own library of Arctic travel and haunted second hand book-stores.)

EDWARD:

FRENCH: *Rolf and the Viking's Bow*

GREY: *The Red-headed Outfielder*

MASTER: *Wonders of Salvage*

PATRI: *White Patch* (re-read). "Good, but a baby book."

PORTER: * *Scottish Chiefs*

RILEY: *Poems*

STRANG: *On the Spanish Main*. "All right, a good book."

TARKINGTON: *Penrod*

ADAM:

ALTSHELER: *Eyes of the Woods*

DUNBAR: *History of Travel in America* (4 volumes).
"Good."

LONDON: *White Fang*

PUSEY: *The Wilderness Road*

TWOMBLY AND DANA: *Romance of Modern Labor*.
"Good, especially story about the light house."

ELLEN:

COOKE: *A Visit to a Coal Mine*

DUMAS: *The Three Musketeers*

HUDSON: *Green Mansions*

LANG: * *Strange Story Book*

MASEFIELD: *Jim Davis*. "Liked it a lot."

MEADER: *The Black Buccaneers*

PAINE: *Privateers of '76*

PORTER: *Scottish Chiefs*

PYLE: * *Men of Iron*. "Liked it a lot."

SHAW: ** *Castle Blair*. "Best of all."

SIDNEY: *Five Little Peppers*. "For younger children."

STEIN: *Little Count of Normandy*

VERNE: *Mysterious Island*

20,000 Leagues under the Sea

WALLACE: *Ben Hur*. "Did not finish it. Could not understand it."

HARRY (*entered school in January*)

BONE: *The Lookout Man*. "Interesting about facts."

HAPGOOD: *Diary of a Non-Union Miner*

PARKMAN: *Conspiracy of Pontiac*, Volume I.
Montcalm and Wolfe

(*Also many pamphlets on labor war in the coal industry from point of view of both sides.*)

MARSHALL:

ALTSHELER: * *Eyes of the Woods*

BONE: *The Lookout Man*. "Fair to middling."

FRENCH: *Rolf and the Viking's Bow*. "Rereading parts.
Good."

KIPLING: *Stalky and Co.*

The Day's Work. "Rereading."

LONDON: *Adventure*

MASTERS: *The Wonders of Salvage*

MEADER: *The Black Buccaneers*

MILLER: *The Hidden People*

WISTER: * *The Virginian*

MARY (*entered school in January*)

BOUVET: *Sweet William*. "Good."

CERVANTES: *Don Quixote*. "Finished. Good."

DICKENS: *Tale of Two Cities*. "Took it home to read ahead of group."

DIX: *Blithe McBride*. "Good. Slums of London story." *Merry Lips*

FRANCE: *Honey Bee*. "I liked it, but it's young."

GREY: *The Red-headed Outfielder*. "Best."

HEMON: *Maria Chapdelaine*. "Unfinished. Did not like it."

HUDSON: * *Green Mansions*

HUDSON: *Little Boy Lost*

JACKSON: * *Nelly's Silver Mine*. "Best."

JOHNSTON: *Prisoners of Hope*

KIPLING: * *Stalkey and Co*. "Best."

MEADER: *The Black Buccaneer*

MORLEY: *Donkey John*. "All right."

POULSSON: *What Happened to Inger Johanne*. "Good, but young."

SPYRI: *Heidi*

TARKINGTON: *Penrod*

Penrod and Sam

TITMARSH: *The Rose and the Ring*. "All right."

WATERLOO: * *Story of Ab*

CHAPTER VII

FOREIGN LANGUAGES

A great demand to study some foreign language came from the group early in October. Spanish was the favorite choice, but as I was unable to teach this I offered French or German instead. I had suggested Latin as a source of many English words, but only Catherine was interested in this because of its use in her church. Finally, two classes were organized, one in French, and one in German. The members agreed to take the time for it out of the free periods for individual work. The German class was able for some time to carry on daily half-hour periods, but the French class met only three times a week most of the year. Only Bob and Edward did not join either group at first, I discouraged their doing so. Edward because he needed so much time for practice in writing English, and because I was afraid of confusing him still further about spelling; Bob, because he had so many other pressing interests and made such good use of his leisure.

In both groups the work was principally conversation, naming of objects in the room, asking and answering questions, and giving instructions that called for concrete action to one another. After a few weeks both groups began, in addition to this daily conversation, to do short written exercises consisting of answers to questions written

on the board by me in French or German. For the German group this involved the correct use of cases in nouns, adjectives, and articles; in French, the agreement of adjectives in gender and number proved an amusing feature. There was a good deal of interest in comparing the different genders of the same word in German and French. Derivations of familiar English words were quickly recognized in both languages as, for instance, when the verb "parler" in French was associated with the English parlor, and the latter described as "the room where you talk." Ellen often asked for a book and studied by herself as did Polly and Anne. The last two had had some French at home and could go on more rapidly than the rest.

By December both classes had asked for books "with stories." The German class took readily to reading in spite of the difficulty of German print, so I gave each one a copy of an easy reader called *Glueck Auf*. This contained a vocabulary at the end, but no English in the reading part. Leo, Paul, and Marshall could read the stories very easily alone, but Catherine had more trouble with the German print, so read with me. George could not do it at all. He had had only formal school experience up to this time and although he was excellent in his academic work generally, seemed less able than the rest to adjust to a new kind of work.

All wanted to translate the first story to see if they could. After that they were satisfied to translate only if they were not clear as to the meaning. After they had read a story through we used the content sometimes as a basis for conversation and became familiar with the new vocabulary. It was noticeable, however, that they

were not nearly so fluent in such conversation as in talking about concrete objects or actions in which they were concerned. This resembled closely the way in which the eight-year-olds had approached arithmetic, showing so much more ease and accuracy in concrete problems involved in their store work than in abstract drill work. Often I overheard the boys using German words and phrases among themselves as they worked on their toys in the shop.

The French class had so much more trouble over pronunciation that I hesitated to turn them loose with books. On their insistent request for a story, I did start reading aloud a simplified version of *Sans Famille*, using this as a basis of conversation. They were all interested, especially Ellen, and took turns reading aloud to the rest of the group. They were able to do this well enough to make themselves understood. Ben had the greatest trouble with pronunciation, but was not self-conscious, and tried hard to talk.

After Christmas both groups suffered somewhat from the coal strike excitement. It was impossible always to find time for the language work daily, and in the French class progress was especially slowed down by the addition of three new members, Edward, Harry, and Mary. Edward approached French with a very logical attitude asking the meaning of each separate word in a sentence and the reason for different spellings. He was not self-conscious about trying to say anything he knew how to say at all and seemed to enjoy it.

Bob joined the German class and surprised me by the ease with which he attacked the pronunciation and by his careful enunciation in contrast to his indistinct speaking

of English. Marshall, one day, tried an original story in German, introducing the use of auxiliary verbs which we had not attempted in the group. All were interested in learning how to transpose the order of sentences in such cases, and we practised it in group conversation.

When the play was at last well under way the group informed me that they had a "petition" to make. This, when duly stated by Bob, proved to be a request for "longer periods" of uninterrupted work and a more regular program. In particular they asked for daily lessons in French and German, as they found it hard to remember with lessons only two or three times a week. This happened to be easy to arrange, as we had at that time the assistance of a student teacher, Mrs. Wegel, who took over the French class, leaving me free for work with the German group at the same time.

It soon became obvious that some of the French class could go ahead much faster than others, and as the same was true in Group XI, Mrs. Wegel organized a special class for advanced French. Polly, Anne, and Ben were invited to join this class. Mary was given her choice and tried the advanced work, but found it too hard for her, as she had begun later than the rest. Adam, who knew more French than most of the group, but had not been working seriously at it, was much chagrined at being left with the beginners. This experience so completely changed his attitude that he was soon able to go ahead with the harder work. They read aloud, asked and answered questions in French on the story read, and did the same in writing for home work.

For the rest of the spring they continued to work in two sections except for about a week when all combined for

some special drill in pronunciation. Ben seemed particularly helped by this, but Edward improved perhaps more than any one else. Only Polly lost interest toward the end of the year and wanted to drop out of the group work, though she was very willing to work on individual exercises.

The German class proposed one day playing mental arithmetic in German and enjoyed this so much that it became almost a daily part of the regular lesson. Bob found it hard to follow, because he was not familiar enough with the names of the numbers. The declension of the three genders of nouns and the use of the different cases were included in daily conversation as were also the present tense of verbs and the occasional use of the past. When I showed them how to conjugate the present tense in the usual formal way and asked everyone to write the conjugation of a different verb on the board, they were greatly interested. Catherine especially commented, "I like this kind of lesson best of all."



CHAPTER VIII

MUSIC, CLAY MODELING, AND SHOP WORK

The group had a half-hour period twice a week for rhythms with Miss Doing. The first few lessons in the year consisted chiefly of high jumping over obstacles and leap frog play to music. Ben, Paul, Anne, Ellen, and Polly needed the bars lowered for them to jump, and Polly could hardly get over at all; George was unable to join in much of the work on account of a lame leg; and Marshall was so foolish and disturbing that with Miss Pratt's consent, I suggested his dropping out of the class. He had been eager to do so from the first, and was very self-conscious about trying to do anything to music. Edward did splendid work in leap frog, making every leap in time with the music, and Catherine did nearly as well.

There was a request from the group for "plays" and Miss Doing gave them an opportunity for free dramatic interpretation of some comic music. All but Polly worked out their pantomimes in couples or groups. Another day Polly, Ellen, and Catherine made up a pantomime to music representing an Aztec ceremony of human sacrifice which they had been planning for some time.

At one lesson Miss Doing started them all trying to sit cross-legged on the floor and commended Paul as "the best worker because he tries everything." The boys soon

gathered behind blocks in a corner, however, and began to fool. Miss Doing told them to use the blocks for real exercises if they wished and each got on a block and slid himself over the floor by throwing his body back and forth, playing lumber jacks riding logs. Miss Doing showed them how to use a poling motion and commended Adam's good use of his back muscles. There was a good deal of fooling and wasted time. Afterwards the boys agreed to ask Miss Doing to give them dictated exercises and start the lesson with "something like leap frog for everybody." Accordingly she began the next lesson with a dictated leaping exercise practised by all in a line. Paul tried hard and succeeded in getting his leap to the music. Bob became silly and as soon as the line broke up, Adam and Ben began to chase each other. Miss Doing called Adam to her to give him special help and he worked well.

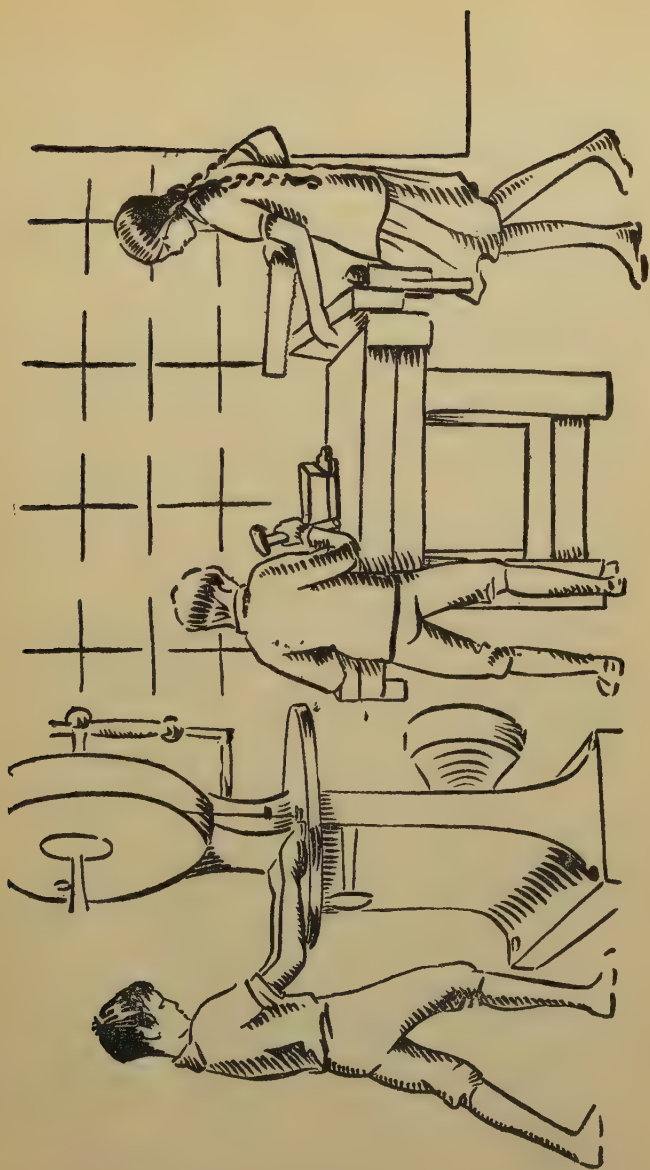
Then Catherine asked for "stories" again and all listened well to the music played and gathered in groups to work out their pantomimes. Bob and Adam sat against the wall and the former said that he did not want to work on pantomimes, so Miss Doing dismissed him. Adam at once joined Leo, Ben, and Paul in a good pantomime representing a dream. Catherine and Ellen again played an Aztec scene showing Montezuma on his throne and a messenger arriving with news of the strangers seen on the coast. Polly danced alone, and Edward watched quietly.

The lesson ended in a leap frog game for all. Anne and George were unable to keep up with the line, so practised on each other in a corner and Leo joined them. All three practised the leap over blocks at Miss Doing's suggestion and she helped them.

Another lesson began with swinging on the rings to music and Edward again did beautiful work swinging down the whole row of rings without losing the rhythm of the music once. Anne would not try at all, and Polly hesitated, but Miss Doing helped her. Ellen could only make two rings without dropping. When the girls asked for plays again, the boys watched without joining in at all. Then they proposed standing on their hands, and Ben did it splendidly with a slow, steady raise of his body. Catherine and Adam, too, were very successful. Bob could get up, but could not hold his balance, and Leo, too, had trouble in this. Miss Doing showed them how to hold the weight in the middle of the back.

Other lessons were made up of this same kind of exercises until, toward the end of November, Miss Doing introduced a square dance beginning with practice in the grand chain. Everyone was interested and alert at once, especially Ben, and Miss Doing put in features requiring close attention, such as a turn in the grand chain at a clap of the hands, or at every third couple. After this the work was almost entirely on learning square dances with set figures and the Virginia Reel. The latter was unanimously welcomed as "the best time we ever had in dancing." At first whenever partners were chosen freely, boys and girls selected their own kind at first, but Miss Doing occasionally mixed them, and finally Edward and Catherine who were decidedly the two best dancers, came always to dance together in the Virginia Reel.

After Christmas Marshall showed so much interest in the accounts of the new dances that I asked if he would like to go up and see them. He accepted eagerly, joined in everything without further ado, and soon was as en-



thusiastic about going to rhythms as anyone else. Anne danced with as much abandon as the others, though she was usually inexpressive.

Even the introduction of chiffon scarves failed to revive any self-consciousness among the boys. Miss Doing gave them definite patterns to follow with the scarves at first and nearly everyone went on to invent further patterns of his or her own. Ben danced through a whole Virginia Reel with a floating scarf tied to his waist and managed it without tripping himself or anyone else. Edward always made himself a partial costume by tying a scarf around his waist as a sash. Others, especially Bob and Catherine, made head dresses as well.

Until nearly the end of February the work on square dances and the Virginia Reel continued to hold the interest of all. They danced with a joyous abandon that was inspiring to watch. Then, however, Miss Doing felt that the group ought to have a different type of work and better music, so she tried to interest them in making original patterns to new music. Disorganization and a spirit of resistance appeared again at once, and the self-consciousness felt by the boys was put into words by Marshall in requesting, "No slow motion! We're not such graceful little things that we can stand that."

Even the vigorous music of a Liszt Hungarian Rhapsody failed to bring real coöperation from the group, so Miss Doing gathered the children together to talk over the work. Their request to be taught definite patterns was so insistent that she gave up the effort to induce them to invent their own for the present and started new set figures. There was still a good deal of dissatisfaction among the boys, however, and Miss Pratt proposed let-

ting them drop the rhythms class after spring vacation if they wished to do so. She felt that they had done good work and that the removal of the critical spirits might give the girls a chance for different kinds of dancing. To my surprise only Ben welcomed at all this proposal to drop rhythms although all knew it would mean an extra yard period and the baseball enthusiasm was high.

"If we can have a regular dance like the Virginia Reel, something that makes you lose your breath, we want that," was the group decision, expressed as usual, by Marshall. Although Miss Doing was not very sympathetic at first with this attitude, she worked out rather a compromise plan according to which the Virginia Reel was danced regularly to begin with. Then when the group was sufficiently breathless, she introduced new figures to the music of a Chopin waltz. As this included some vigorous wheeling as well as careful listening for phrases and rhythm the children were kept alert and unself-conscious. Miss Doing rewarded them for this work by introducing next a new Swedish folk dance which was taken up eagerly and danced beautifully even at the first attempt. "The best of all," was the verdict of the boys.

In addition to the folk dance and the still popular Reel, there was a good deal of athletic practice, such as leaping to music, standing on hands and head, and broad jumping. Catherine was as good at jumping as any of the boys except Edward, and better than Bob, Adam, Paul, or Leo. Polly and Anne improved very much, and Ellen became nearly as good as Catherine. They practised often by themselves in the yard. There was also some work in bouncing balls to music.

Marshall dropped out again from lack of interest, and

Ben proposed dropping one lesson a week now that the weather was so good for baseball. I asked if they would care about the rhythms work in addition to yard, if both were possible, and all but Marshall and Harry said they would. Hence, it was arranged to have rhythms as usual on Mondays and Thursdays, and in addition to have an extra yard period on Thursdays. The group was delighted with this new schedule for the last month of school.

Except for this work with Miss Doing, these children did not have much music in their school experience during the year. The former regular music classes had to be given up on account of Miss Hubbell's illness, but Miss Pratt arranged for some classes in folksongs with Ratan Devi, an artist who made a specialty of this kind of singing. It was left optional with the three oldest classes in the school to join or not according to their individual interests. As all these groups had had similar work with her the previous spring, they had a basis for making their decision. All the girls in Group XII, and Bob, Paul, and Adam joined the class, leaving the other boys to put their extra time into other activities in the shop, printing room, or laboratory.

After a week or two Bob and Paul came to the conclusion that they were spending more time on music than they wished to give it, since they were both studying violin outside of school. Bob went to Ratan Devi to talk over the possibility of their coming once a week to the singing class instead of twice. She agreed to this for them both.

Each lesson consisted of two parts. There was a preliminary practice in technical exercises, such as singing intervals and arpeggios, distinguishing between major and

minor chords, and beating time on drums with rests introduced in one hand opposite beats in the other. Then for the second part of the lesson, there was the singing of folksongs with opportunity for dramatic or humorous expression. Anne showed an animated enjoyment of this singing never shown in any other kind of school work except the rhythms.

During December, owing to pressure of interest in making toys and Christmas presents, everyone became unwilling to spend two afternoons a week on music. Even Catherine said that she "did not get enough out of it to make it worth while," and all dropped down to one lesson a week. Nevertheless, all of the children apparently enjoyed the class very much when they went. As other interests became more and more pressing, after Christmas, it was hard to persuade anyone but Anne to go even once a week. Clay modeling, mathematics, dramatics, and the laboratory were strong competitors, and after January when work on the play became particularly absorbing, the singing class was dropped off our program entirely.

The clay room, carpentry shop, laboratory, and kitchen were open to the older classes all the afternoon, including the period from three to four-thirty after the end of the regular school session. The children made their individual appointments there with the teachers concerned. The girls, especially Catherine and Polly, spent nearly all their free time in clay modeling becoming increasingly interested as the year went on.

Polly began by making a plaque representing the Aztecs' ceremony of human sacrifice inspired by the accounts we had read from Fiske. The decorative detail was

beautifully balanced. She was so much interested in this that she made several sketches from figures in the Aztec Hall at the Natural History Museum and used them for reference. She finally colored the plaque and fired it in the school kiln for a Christmas present to her mother.

Catherine worked chiefly on figures, beginning with a centaur inspired by her favorite Greek stories. When it was done she had no further interest in it and said that I might have it. She did finally paint it at Miss Levin's suggestion so that it could be fired. She came back to the classroom one day to ask for Ellen's story about the French settlers who tried to go home on a raft as she wanted to "make the story in clay." The result was a group of figures so large that it would not fit into the clay closet and too heavy for her to lift. The figures were full of action and the design of the group was interesting, though of course, it was too ambitious an undertaking to be successful as an art product. She had finished the previous year, one of a pair of book-ends decorated with an oriental design of a lady in a sedan chair, influenced by the group interest in Marco Polo's voyages. At the request of one of the teachers she finished the set and sold it. The new end was decorated with a Japanese house and garden in relief, and she worked steadily on this one design for about a month.

Polly, on the contrary, did various small "sketches" but Miss Levin reported that it was difficult to induce her to finish anything. She did finish one piece of work, an incense burner, to which she gave the feeling of a real Chinese model. As her father had been in the East and had brought home many typical products, she was familiar with Chinese forms of art.

Ellen, too, spent all the time she could spare in modeling. She did not stay for the after school period, however, and often used her free time during school hours to get extra help in mathematics, so she had difficulty in finding as much time for clay work as she would have liked. She modeled chiefly figures, using big, broad lines, a little grotesque in style. Toward the end of the year, all the girls often worked together on a group of figures about which they would make up a loose kind of story almost as if they were playing dolls. Mary and Polly had to be driven out to the yard to play when the time came, especially when their products were ready for the final glazing and firing.

George went to the modeling room to make clay supports for an electric stove he was making in the laboratory, and again to make a plaster-of-Paris mold for casting tin soldiers. After finishing these, he became interested in trying the bust of a man, but he left school after this and none of the boys except Bob did much work in clay.

He became interested early in February in making first a plate, and then a bowl on the potter's wheel. He decorated both of these with designs expressing his dominant interest in Arctic exploration. The first design he worked out by the repetition of a picture of an Eskimo dog that he had found in one of the books he had read, but the later one was entirely original and very carefully worked out first on paper before being put on the clay. When his plate with this design on it was glazed and fired it proved one of the most beautiful products of the year.

Early in the fall Edward started a vase after having made a careful drawing to show the decorative detail



that he wanted. He became very self-conscious because there was a visitor in the clay room, stopped working entirely, and never returned to finish the vase. Instead he started to make a copper tray in the laboratory, and did a good piece of work. Many of the other children worked in metal, too, but as much of this work led into or was connected in some vital way with other laboratory experiments, it is described in detail in the chapter devoted to these experiments.

The only ones in the group who worked very much in wood on individual projects in addition to the toy making, were Edward, Bob, and Adam. Adam started the first week of school to make a surf board. Beside all his work on toys and scenery, he managed to find time to work steadily throughout the winter both in laboratory and shop on a large toy motor boat. He had some parts for his engine, but had to do a great deal of soldering for the boiler, made an engine base and set up the whole engine in his boat.

Early in December, he and Bob became enthusiastic over the idea of making a "real Kayak to use at Long Beach." They worked hard for whole afternoons at a time. In working out their design, they were sent by the shop teacher, Mr. Reber, to Mr. Kusner, the mathematics teacher, for help in calculating the size necessary to carry their weight. This involved a study of the principle of floating through displacement of their weight of water, and also some research to find the weight of a cubic foot of water. The boys were so intensely eager to start that they had no patience for more than a rough calculation. They put outriggers on the boat to steady it and the final product was successfully launched during

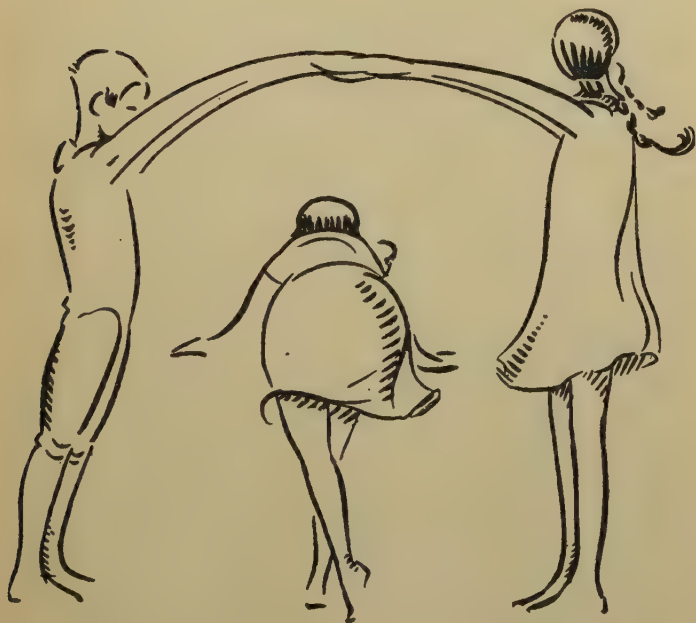
the Christmas holidays.¹ Bob also made during the after-school periods a bed for the underground house he and Adam had built in the sand at Long Beach where they often spent week-ends together.

In January, when the snow came, they worked together remaking a broken sled of Bob's. They painted it gaily and turned out a fine job. Neither of them ever needed suggestions or help. With Bob it seemed to be an interest in specific pieces of work he wanted to put through that led to spurts of enthusiasm for carpentry followed by equal enthusiasm for some other line of work, clay modeling, laboratory experimentation, writing, or reading. But the shop itself drew Adam like a magnet, and his real life was there. Edward was equally attracted, though his interest was more in the decorative end of the work, whereas Adam's was chiefly in construction and mechanics.

Edward made himself a gun rack, a "secret box," with tray and partitions, some book-ends, and as an order from Miss Pratt, made for her a new frame for a chair seat. He made an error in boring for dowels on this last job, and had to remake two new parts, but he worked well and without loss of patience. His greatest drive, however, came just at the end of school when he started to make a harp to take with him to Woodstock where he was to spend the summer with a musician interested in starting some community music work with a group of boys. Edward had been with him to look at musical instruments at the Metropolitan Museum, had decided to make himself a harp, and had made a drawing of the

¹ See Chapter V, page 81.

one he wanted to copy. The shortness of the time and the newness of the task combined to stimulate him to such an extent that he almost gave up going with the group on the final excursion up the river, in order to have a whole day to work on the harp. However, he arranged to spend all day Saturday in the school shop, so did finally decide that he could take time off for the picnic, and the harp was ready to take with him when he went to Woodstock.



CHAPTER IX

MATHEMATICS

Review tests in the four fundamental processes showed the group divided at the start into two main groups. Marshall, George, Leo, Paul, Bob, and Edward in the fast group, Adam, Ben, and the four girls in the slower one. Polly, however, was so accurate in her work that she sometimes ranked with Marshall in having perfect results in solving problems. All the girls needed help in addition of fractions and changing fractions to decimals. Adam, too, had forgotten the latter process, and Ben was hesitant. Catherine proved so weak in multiplication that she asked for drill work on the tables to take home, and Ellen and Polly joined her in this special drill. All worked quietly with good concentration on test papers. Marshall and Leo seemed able to handle percentage so readily that I gave them the list of the school attendance on the first day of school and asked them to find what class had the highest percentage present. Marshall did this eagerly, accurately, and independently, and Leo did, too, after I started him on the method.

All were inclined to be very inaccurate in the use of the decimal point in drill work, but usually checked themselves on this in problems when a wrong decimal point produced an absurd answer.

Incidental problems arose in connection with other work. All the class, for instance, worked on calculating differences of time between places of given longitude as part of some geography research. Adam, in making a working drawing for the shop one day, had difficulty in translating two inches to its equivalent on the smaller scale of one inch to one foot and asked me "what fraction of an inch" it would be. When I replied by asking what fraction of a foot two inches was he was launched. Marshall and Ben had no difficulty in calculating the area of a circle in their work on a hydraulic press and not only remembered the formula from last year, but knew that "pi" was the ratio of the diameter to the circumference. Marshall, also, solved readily an abstract problem of the same type taken from his physics text-book.

A Woody-McCall test given for diagnostic purposes in November revealed various individual weaknesses chiefly in fractions and long division, and all worked on individual drill sheets taken from the Lennes 6th Grade *Work, Drill and Test Sheets*, to fit special needs.

Anne had so little conception of fractions that she worked on divisions on the ruler and on folding paper into thirds and sixths for a while before attacking common denominators. She seemed thoroughly amused at the discovery when she actually *saw* that two-sixths of her piece of paper made one third.

Polly and Ellen worked all of one week on addition and subtraction of fractions, but Catherine went quickly on to problem sheets involving the use of fractions in all forms, and worked independently with deep concentration. Marshall, Leo, and Paul asked for "a hard problem" to work on together and solved successfully the one which

I gave them. Marshall did not work up to his capacity in group work, however, and was disturbing to the rest, so worked chiefly alone from the 7th grade text-book.

Edward handled technique with greater ease and accuracy than anyone except Marshall, but said that he found problems hard. However, in a test given one day by Mrs. Clark to a voluntary group consisting of all the boys, Edward and Marshall were the two who had perfect papers, and the whole test consisted of problems, chiefly in percentage. The boys had been taking advantage of an invitation to work on percentage with Mrs. Clark, who had taught them mathematics the year before, but who was now teaching the nine-year-old group. Ben and Adam found that they were not up to the rest, but wanted to work with that group so asked for extra examples to practice on at home.

The girls said that they wanted more practice in fractions and stayed with me for help in that line. To put more reality into the problems, I started them on calculations of the cost of the wood used in various toys that they were making. This involved quite difficult fractions and mixed numbers. They were also very much interested in actual problems of measurements, and learned how to measure lines with a compass. Catherine was able to work with the advanced group, but preferred the more individual work.

In December, Mr. Kusner came into the school for special work on mathematics and Marshall, Leo, and Paul at once seized the opportunity to go to him for "free work," asking to learn how to "measure by angles." He was in school three days a week, and began helping in some of our business problems, but found the chil-

dren more eager to work with him in small groups on special interests.

Ben and Adam had their interest roused by the work the other boys were doing in intuitive geometry and went to Mr. Kusner. A little later Catherine, Polly, and Ellen became interested and organized a third group. Bob preferred independent work from a text-book saying that he did not know enough percentage as yet to go on to anything new. Edward felt the same, so neither of these boys went to Mr. Kusner regularly until February. In addition the whole class worked with me on the two days between Mr. Kusner's visits on problems from the *Schorling-Clark* seventh grade text-book, or on special problems left them by Mr. Kusner.

This was principally a study of the properties of angles, triangles, and other geometric figures. So far as possible the children discovered by themselves most of the properties of triangles and polygons and any new principle was deduced logically from more elementary ones. The Pythagorean theorem, for instance, was first studied experimentally and then logically proved. In dealing with this theorem, they found for themselves the need of knowing how to find the square root of a number and wanted to learn how this was done. They worked on this process at some length until they had mastered it. Polly was particularly interested in this and worked very hard. The incidental technique was very difficult for most of the children, but for some reason it always held their interest. They seemed fascinated by very large numbers. When Harry joined the boys' group, Paul and Marshall taught him square root and with a little help from Mr. Kusner, showed him the proof of the Pythagorean theorem. Then all three of

them calculated from actual measurements, the diagonal of the classroom.

All the children did many problems involving the use of similar triangles such as calculating the heights of buildings or widths of rivers. Incidentally they learned in this way to deal with ratio and proportion. Mr. Kusner reported that Catherine was the only one in the group to ask why the sum of the angles in a triangle should always equal 180 degrees. The rest had been satisfied with experimental demonstration of the fact, but she had wanted the theoretical proof as well. She came down from the mathematics room one day with her eyes shining with excitement to tell me of "the wonderful experience" she had just had in "measuring the distance of the nearest star." Mr. Kusner had told her the distance in light years and the speed of light, and she had calculated the number of miles. This had grown out of a request from the girls to work on problems involving very large numbers. Mr. Kusner had shown them also how triangles are used in calculating distances of stars.

In all the groups, some consideration of elementary theoretical astronomy often grew out of discussions of the practical uses of the properties of triangles. The children always enjoyed this and asked endless questions. With some of the boys this led one day to an explanation of the trigonometric functions. Adam and Ben decided they would like to make, from measurements and calculations of their own, a table of tangents.

During January I started a daily drill on multiplication tables for all by giving each child a paper with one hundred combinations on it and allowing four minutes to write the answers. Interest was keen in the whole group

and kept increasing as they saw their scores improve daily. Polly, Bob, and Adam were accurate from the first and were only held back by lack of speed. We kept up the drill, including daily study of the combinations missed the day before, until every one except Ellen, Polly, and Leo, who were absent most of the time with measles, succeeded twice in writing the one hundred combinations in four minutes without a mistake. Paul, Bob, Mary, and Harry did the same with division combinations with almost equal facility.

To avoid becoming stale on this drill work we dropped it after about two weeks and went back to problems in percentage. Adam and Ben worked usually by themselves on completing the table of tangents which they had started with Mr. Kusner, calculating them from measurements on triangles which they drew for that purpose. This involved a great deal of much needed practice in long division as well as very accurate measuring. Several times they found it necessary to do the work over, but were sustained by their spontaneous interest. The resulting table agreed quite closely with an accurate one with which they compared it when finished.

During January also, at Miss Pratt's suggestion, I started regular home work in mathematics and every one was enthusiastic over it. Two problems from the *Schorling-Clark Supplementary Review Book* were assigned daily, unless there was special work left by Mr. Kusner to be done for him. Bob and Paul were the first to have perfect papers, working independently. Marshall and Ben who worked together did not turn in a single accurate piece of work until I commented on their failure and recommended independent work, after which both

turned in perfect papers. Catherine analysed her own weaknesses and would often ask for more practice in certain kinds of problems.

Interest in the home work led at times to requests for extra periods in mathematics in order to find out how to do puzzling problems, so was not entirely successful as a method of saving time in school for other things!

As Adam was absent most of February, Ben joined Marshall, Paul, and Harry for work with Mr. Kusner, and was able to keep up with them very well. Bob, Edward, and Leo started another group with Mr. Kusner, and Adam joined them on his return. The girls gave up special appointments for a while and preferred the classroom work in problems, but the boys, especially the first group, were so enthusiastic that they often worked through the whole afternoon from one-thirty to three, even skipping their yard period. A good deal of this time was spent on the actual construction of a range finding device. Since these boys had learned all the principles involved in such an instrument they planned it carefully and made all the calculations necessary to calibrate it. The device was made quickly and the calibrations laid out on a card to be glued on, but the first card did not suit them and they did it over several times. Finally they tried it on copper, but this did not satisfy them either and they decided a carefully made card would be best after all. They frequently went on with this work on the two days that Mr. Kusner did not come to the school. The daily home work examples proved sufficient to keep them up with the class in handling percentage and interest problems. All the class applied their skill in calculating percentages to marking

their own spelling papers, and at Marshall's suggestion went on sometimes to calculate the average percentage for the group. Catherine, Mary, Leo, and Edward became interested in making bar graphs which they painted in very decorative fashion. Leo also made a line graph showing school attendance during a specific period, and the whole class worked on circle graphs.

Polly stayed in the classroom often during the afternoon free time to work on mathematics problems that she felt uncertain about, and I was able to help her at these times to make up some of the work that she had missed during her absence. She was always accurate and very good at reasoning. Edward, too, often came to me afternoons for special help, and when Ellen returned, she also, made use of this opportunity. The home work stimulated great interest and there was eager discussion over different methods of solving specific problems. The result was that they came to class with a definite curiosity; each one presented his solution, and the group criticised or approved.

Edward seemed unable to reason on a level with the rest, but I was never sure how much was due to his lack of confidence in himself, and how much to real inability. He asked me so constantly whether to multiply or divide that I told him I was going to see whether he would believe me if I answered him incorrectly. I tried it several times, but never did catch him.

Anne was definitely behind all the group, and was excused from home work at her mother's request. She worked at her own pace in school. In the *Stanford Revision Educational Tests* given at the end of February, only she and

Edward were below their chronological age in mathematics; Polly was on a level with hers, and the rest were well above.

When we started work on areas of rectangles, triangles, and circles, both Polly and Ellen became among the most interested in the group. Appended are several papers of problems of the type left by Mr. Kusner with the whole group for home work. Polly was the first to invent for herself the way to find the area of a triangle, and Ellen was the first to turn in her paper of problems accurately solved. No one approached Paul in clearness of statement and the neatness of his papers. Eagerness in solving these problems became universal, however, and each one wanted to work them out for himself. Catherine was overjoyed when she caught on among the first to the solution of one particularly puzzling figure. Edward found the use of formulæ very confusing at first and also the use of new names, such as, radius, diameter, circumference, and pi.

The whole class, except Anne, went regularly to Mr. Kusner from the first of March on, working in separate groups of four children each. In this way each group had two lessons a week with Mr. Kusner, and worked on the problem papers on the intervening days. When work on scenery absorbed all the free time in school, the problems were done at home.

In discussing the principles of a range finder with the boys who were making this instrument and in seeking a formula to make the calculations for calibration as simple as possible, Mr. Kusner introduced a little algebra. The boys became fascinated immediately and wanted to know other uses for algebra. They learned to solve simple linear equations and as this linked up with their work in chem-

istry they studied algebraic processes from the point of view of their use in science.

All the boys were very much interested in finding out how to use a musketry rule brought to school by Mr. Paley and the four boys who were making the range finder immediately recognized that the principles of the two instruments were exactly the same.

Bob always wanted to know the applications of mathematical ideas to navigation and exploration and this led to many discussions of latitude and longitude and how the sextant and artificial horizon were used in measuring them. This, of course, involved such topics as the theory of solar time, time belts, the astronomy of the earth, etc. They also considered the measurement of speed in water by means of the log line, and this brought a discussion of the knot and the nautical mile. Most of this was discussed with Bob alone as the others were not interested. No one wanted to skip the appointments with Mr. Kusner even for work on the play, until the last few days before the final production of the play when all academic work was dropped.

In the second *Stanford Achievement Test* given at the end of school to check up progress, Edward had made the incredible gain of over two full years. This difference in his scores I interpreted as due chiefly to a change of attitude on his part. Polly also came up well above her chronological age in this second test. In general it showed the whole group much more on a level in their ability to handle fundamental arithmetical operations than they had been in the fall, and I felt that in this respect the test did reflect a real development, though, of course, it did not include any measure of the wider interest

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in mathematical thinking which had become so live an interest especially for the more advanced workers.

SAMPLES OF MATHEMATICS PAPER ASSIGNED BY MR. KUSNER FOR HOME WORK FOR WHOLE GROUP

1. 90° is what per cent of a full turn?
2. 135° is what per cent of a full turn?
3. 25° is what per cent of a right angle?
4. Through what % of a full turn does the *minute* hand of a clock turn in 25 minutes? How many degrees is this?
5. (a) Through what % of a full turn does the *hour* hand of a clock turn in one hour?
(b) Through what % of a full turn does the *minute* hand of a clock turn in one hour?
(c) The speed of the *hour* hand is what % of the speed of the *minute* hand?
6. 37% of a full turn is ?
7. 82% of a full turn is ?

CHAPTER X

LABORATORY EXPERIMENTS

As in the case of the clay modeling and shop work, the children in this school make their own appointments in the laboratory by means of cards issued separately for each individual and each period of work. On the cards there is space for the special teacher's comment on the work of that particular period. Each week these cards are turned in to the group teacher who is thus enabled to keep in close touch with the work done outside the classroom. It is due to the particularly careful notes kept by Mr. Paley on the work in the laboratory that the detail in this chapter was made possible.

The whole class with the exception of Catherine, Ellen, and Anne were so eager to work in the laboratory that Mr. Paley offered a special morning period when they could have the laboratory to themselves. As Marshall, Leo, and George were taking no part at first in the toy making and had chosen science work as their central interest for the year, it seemed important that they have a special opportunity to pursue the problems and principles involved in their experiments. They and Paul went regularly every morning to the laboratory, and in addition secured extra time in the afternoon free periods.

Leo's first interest was in fixing his broken compass and Mr. Paley found him independent in his work and quite

different in method from the previous year. He needed much personal attention, however, because of his lack of skill in handling materials. He tried to make a bomb as others were doing, but could not do accurate work alone. He did not grind his material well, but in order to secure a loud report added a lot of amorphous phosphorus to make up. He evidently knew that his materials were not well mixed, as he was unwilling to have Mr. Paley or the other boys examine his bomb.

Marshall and Ben also began by making bombs in which they had been interested the year before, but Marshall let Ben do all the planning and mental work, while he simply got materials ready. Mr. Paley felt that they were getting no new experiences out of this bomb making and when Ben announced that he would like to try something new, Mr. Paley took advantage of this opening to discuss with all three of these boys what line of interest they wanted to pursue.

Marshall and Ben chose physics and wanted to make a hydraulic press. Mr. Paley gave them a book on physics and told them to look up the principle of the press for themselves and make a drawing of it. They did this with great interest and success and explained the drawing to me very clearly before going back to the laboratory. They measured the diameters of the two cylinders used for their press, and calculated the areas so as to find the increased power of the press. Mr. Paley reported that both kept well to their job except on one occasion, and were greatly interested all through October. They worked in after-school periods as well as in the regular morning time. Both learned the necessity of precision in scientific work.

Leo chose chemistry as his special line of interest and Mr. Paley suggested making hydrogen. Leo was interested and Mr. Paley helped him analyse what would make hydrogen. He also learned the meaning of the symbols involved. He made the hydrogen, then burned it in air and got water. He was eager to go on to make oxygen, but Mr. Paley would not let him do so until he had written up the hydrogen experiment in his note-book. He did this quickly and clearly, and had great success with the oxygen experiment which he also wrote up. He followed this by distilling water. He then became so interested in a new gasoline engine that he took his yard time to experiment with it. The following day he again wanted to run the engine, but soon lost interest and was sent back to his classroom. After this he tried to make a candle for the candlestick he had finished in the shop, but was so awkward about it that he had very poor results. He went back to try again.

Adam worked during all of October on the engine to go in a boat he had started at home. He is a slow worker, but is intensely interested in the principle of various types of engines and explained them to me clearly from his own drawings. When it came to soldering legs to his steam boiler, he was anxious for Mr. Paley to do the actual work, but the latter knew that Adam was capable of doing it alone, so gave no help, and he did a fine job. He worked for about six weeks on this steam boiler and Mr. Paley reported that the results justified the time spent on it. Adam himself said that the boiler had made him a "solderer." Fearing that the ends would not be strong enough he made a binding bolt that ran from end to end, cutting the rod to size and cutting his own

threads. After finishing the boiler, he helped Bob make a lamp for the hut they were building together at Long Beach. Another day he repaired a broken motor. The brushes were broken off and the connections bad, but he put it into good shape.

Bob came to school with the idea of making luminous paint and interested Paul and Mr. Paley in working on this, too. With the aid of an encyclopedia they found a formula and secured the necessary materials, but were not successful in making satisfactory paint. Both boys searched the public library for more information on the subject and tried various experiments, all of which they wrote up in their note-books. Incidentally they became greatly interested in radium. After three weeks' experimentation on the paint without great success they decided, again on Bob's suggestion, to try electric plating. Only Bob stuck to the job.

George's interest was caught the first week of school by a class discussion as to the way an astrolabe was used by early explorers to find latitude and he volunteered to make one. After much research with the aid of the school librarian, he went to the laboratory to work on the astrolabe and Mr. Paley found him a "fine worker." He also made an electric heater experimenting with high resistance wire to find the proper amount to use on the stove. He remarked rightly that this wire could be used as a fuse.

After this he soldered together some broken lead soldiers he had brought from home, then went on with experiments in electricity and started a battery. He tested various metals for conductivity and made a cell battery. He wanted to make an arc light and did so with two

carbon rods which Mr. Paley gave him. Next he asked how electricity runs a motor, and with the aid of a small St. Louis motor easily grasped the principle. He made his own electro-magneto by winding some wire around a nail and connecting both ends to a battery. "It was a good piece of experimenting and he showed striking capacity to carry an idea into a new field," was Mr. Paley's comment. Another day he brought a boat from home and put a glass sky-light on it, learning to grind the glass smooth on an emery wheel. He also soldered a sighter on to his astrolabe.

Ben was absorbed in toy making all of November and his laboratory work was chiefly on making toy tools from scraps of metal during the after-school period. He and Paul spent one morning period mending their jig saw by making a new copper shim for the bearing. When he returned to the work of making a new piston for his press with Marshall's help, both got into trouble in a crowded afternoon period.

Bob spent the first week in November working daily on copper tools for his toy men. Then he wanted to make a little heater for his seashore hut. He took a piece of brass piping, bent it into the shape of a U, and plugged one end. He drilled holes, then connected the open end to a reservoir of kerosene and was surprised that it did not burn. To show him the reason, Mr. Paley asked him to drop a match into a bit of kerosene to see if it would burn. He found that it would not. He then tried wicks and saw that the kerosene arose and burned well. Still doubtful, he repeated the same experiment next day, and was finally convinced that dropping a lighted match into kerosene would extinguish the flame, but that kerosene

would burn in a wick. For lack of steady interest after this, he and Adam both fooled in the laboratory and were excluded for the rest of the week, together with Ben and Marshall. All four were disconsolate.

Edward made a copper tray which was a fine piece of work. Then he worked steadily for about a month on a paper cutter for Miss Pratt on which he etched an original design. At first he often needed to be reminded to stick to his work. The crude copper or brass seemed to mean little to him, but he showed great interest when his outline appeared, and he won Mr. Paley's recommendation as a fine worker in copper. One day he started a lively discussion in the laboratory group by insisting that copper has a grain like wood. He noticed that parallel marks seemed to run in one direction and justified his opinion from an empirical point of view. He also worked hard to finish some tongs ordered by one of the teachers for a Christmas present. Together with the pressure of toy work this kept him so busy that he had to plan his time very carefully. He was still putting the final touches to his orders after the Christmas party on the last day. However, everything was delivered in time, and he never hurried his work or relaxed his standards of workmanship in the least.

Polly, too, worked a good deal in copper during the fall, chiefly in after-school periods. She made a door plate, then a candle stick of original design involving a fine bit of work in soldering the base to the piping. She also made some candles to fit. Next she brought from home a stone she wanted to set in a bracelet and hit upon an original idea of how to set stones in metal. The plan was logical and workable and all her work was good. She was the first to start in the school an enthusiasm for making metal

lamps. Her interest was not much in the electrical side of a lamp, but rather in the artistic design, and she showed little care for good connections, but great care in hammering the copper. When she finished this piece of work she wanted a new job, and became interested in some soil specimens she found in the laboratory. Mr. Paley showed her how to analyse them and she found the following: (1) that the loamy soil when heated gave off a vapor; (2) that it became black; (3) that it gave off an odor. Mr. Paley interpreted the black as a proof of the presence of carbon, and the odor as due to gases.

Catherine wanted to "start something new that will be a long experiment so I can get interested in it." She thought that she would like to "make something go," so Mr. Paley proposed rebuilding a motor. She was interested in this and reviewed what she knew of magnetism in relation to electricity and motors. She made a fine job of rewinding field coils, made a set of the sides and ground an armature to the right size. She enjoyed the work for two or three days, but after that became too absorbed in writing stories and in clay modeling to go back to the laboratory for some time.

Marshall had become interested in metal work through making copper ash trays. It was the first time that he had ever attempted in the laboratory to make anything for use. He kept at it well, making a difficult arrangement for a cigarette holder on his tray. He enjoyed this work so much that he started on a set of candlesticks on which he worked both during school and in the after-school period. His soldering brought forth an interesting discussion, for in annealing copper, Marshall noticed that it changed color and remarked on this phenomenon. Bob

immediately said that the change was due to oxidation and that the color was copper oxide. Mr. Paley asked what that meant and Bob said it was "copper and oxide," amending it on question to "copper and oxygen."

Meanwhile, Leo, too, had become launched in constructive work at last. He had begun by making candles for want of anything better to do, but Mr. Paley felt that he was lacking in ideas and needed to be led into something richer in content. He, therefore, introduced him to some experiments in amalgamation of mercury and lead. Leo was engrossed in the process of getting the pieces of lead covered, but showed no interest in the abstract principle and returned next day to candle making. Mr. Paley then started him on experiments with electricity suggested by interest in George's work and Leo tested the conductivity of various objects with a lamp board. He also traced the circuit of a bell to explain its ringing and showed a good sense of circuits. He explained continuous ringing by the use of an interrupter. After this he suddenly asked to make a copper ash tray like Marshall's, kept at it till he finished it within the week and then began a wrought iron lamp.

Paul at once became interested in trying one too, and both boys often worked for two periods a day on their lamps. As neither of them had had as much handwork as the rest of the group, it was a new interest for them and they both surprised Mr. Paley by their good work. The hardest part was drilling holes in the iron rods which had to be located by accurate measurements. Leo stuck to this with even less signs of discouragement than Paul and showed fine ability for accurate work. Paul was eventually discouraged by mistakes he had made, but still

more diverted by interest in a new type of more theoretical laboratory work that arose after Christmas and he never finished his lamp. Leo became interested, too, in the theoretical work, but he managed to find time in after-school periods to finish his own lamp as well as Paul's which the latter had turned over to him.

Harry and Bob did the most laboratory work during January. Harry, inspired by the interest in our play which was just starting, made himself a fine acetylene lamp such as miners use; but he did not consider it good enough for the play. After that he etched the names of his former class on a copper tablet to commemorate their baseball victory over the school faculty the previous spring.

Bob wanted to experiment with ether to verify something that he had read about it in a story of Arctic explorations. He made the ether himself, at first using too much alcohol, but on a second trial securing a fine ether. Then he saturated a paper with it and found that the ether did burn off long before the paper burned. He wanted to try it on his hand as the explorer in the story had done to impress some Eskimos; but Mr. Paley advised his trying cloth first. As the cloth was scorched Bob decided to give up his "magical trick!"

During February in addition to this individual work, the whole class went to the laboratory for a weekly discussion in which Mr. Paley reviewed with them the principles involved in various experiments with which all were familiar. The subject of air pressure was chosen by request from the class and was discussed in connection with the barometer. Mr. Paley raised the question whether mercury in a large tube would rise as high as mercury in a small one. Polly thought it would not because the

larger quantity would be heavier, but Bob said it would rise to an equal height because the larger amount of air pressure would counteract the greater weight. As opinions were divided between these points of view, the experiment was tried and Bob's reasoning was proved to be correct. A discussion of specific gravities followed and Mr. Paley asked the class to solve the problem of the height to which water would rise if used instead of mercury in a barometer. Calculations followed in which it was shown that water might be expected to rise several stories of the school building, and Paul, Harry, Catherine, and Mary undertook to verify this by constructing a water barometer of glass piping. They did so successfully, but their prophecy that it would freeze over the week-end and break the glass was also verified. This led to discussion, at the next weekly meeting, of the expansion and contraction due to heat and cold and to some illustrative experiments with metal balls and rings.

In summing up, Mr. Paley asked every one to bring in to him a written definition of specific gravity, explaining the meaning of the term in his or her own words. "Just pretend," he said, "that I am perfectly ignorant and see if you can make me understand it!" "Oh no," said Adam, remembering former difficulties in explaining to me the principles of various types of engines, "we will just see if we can make Miss Stott understand it!"

A new type of laboratory work developed during February through Harry's inspiration. He had been working in the laboratory by himself mornings, while the rest of the group were at rhythms, and had become interested in making acids. Paul joined him in this work during an

after-school period and both boys asked Mr. Paley to tell them how one could know what is needed to make a specific acid. Mr. Paley pointed out to them that hydrochloric acid, for instance, is composed theoretically of hydrogen and chlorine; that ordinary salt is composed of sodium and chlorine, and that all that is needed is to have the chlorine of the salt combine with the hydrogen of another acid.

This type of synthesizing caught their interest and Harry said he had made hydrochloric acid before, but he never understood exactly what had happened. The boys then asked Mr. Paley to arrange a series of experiments that would give them facility in predicting such happenings. This was the beginning of a course in chemistry. Interest in learning the chemical symbols for different elements and combinations led to a sort of game in which Harry and Paul balanced all the equations they could find in a book. These equations were mostly double decompositions and all were written in symbols many of which the boys seemed to have learned unconsciously.

Their enthusiasm over this new work led Marshall and Ben to join them and Harry and Paul reviewed their experiments by "being profs" to the recruits. A study of the positive and negative charges of various elements and their differing valences led to real understanding of the combinations and recombinations made experimentally in the laboratory. Without any suggestion from Mr. Paley the boys took some books home and came ready the next day to write the symbols and valences of the more common elements. They saw from the writing of equations

that the plus goes to the minus and commented immediately that it was just like magnetism.

In another connection Mr. Paley interpreted the symbol SO_4 as meaning that there was one atom of sulphur to four atoms of oxygen. One boy objected "but you can't really see an atom. How can we know that this is true?" Mr. Paley explained that in the equation referred to the formulæ represented the smallest amount theoretically obtainable, but that they could be multiplied indefinitely and so made to represent quantities large enough to be dealt with concretely. The boys set right to work to multiply both sides of an equation and satisfied themselves that it could be done without destroying the accuracy of the statement. One of the boys reported a little later that an algebraic equation was just the same as one in chemistry; that if you multiply one side you must multiply the other to balance it. From this time on the chemistry and mathematics constantly reënforced each other. Since this type of work required close concentration, appointments were made with Mr. Paley for periods when no other work was going on in the laboratory and an hour three times a week was secured for this class.

Meanwhile, Catherine and Mary became fired by the boys' enthusiasm and asked to start "a girls' group, too." As the boys had too much of a start to make it practical to include the girls in their class, Mr. Paley approved of this proposal and arranged another period for the girls. When Anne and Polly later joined as new apprentices, Catherine and Mary were able to instruct them as Harry and Paul had instructed the boys. The girls, too, showed

steady interest and keen thought. In one difficult experiment of passing steam over hot metal to produce hydrogen they had far more successful results than the boys.

Adam, on his return to school after a long siege of ear troubles, was eager to be included in the science work. He, Bob, Leo, and Edward organized a new group of their own. Hence, the whole class, from March on, became divided into three science groups with the exception of Ellen who put the time into extra work in mathematics. Each group had one morning period and one afternoon period in the laboratory each week beside the time individuals often spent there after three o'clock.

Just before the end of school, Mr. Paley gave to the group composed of Harry, Ben, Marshall, and Paul, sixty review questions from Dinsmore's Secondary Chemistry, and was delighted with their ease in answering. These questions covered about one term's work in high school elementary chemistry.

The following is Mr. Paley's list of the experiments done by this group:

1. Heated metal in air and found that it became heavier, not only theoretically, but by actual weighing the substance before and after heating. The substance formed is an oxide.
2. Found that some oxides like HgO (mercuric oxide) decompose under extreme heat and the oxygen is expelled.
3. Learned to calculate the percentages of various elements in compounds.
4. Prepared oxygen by:
 - (a) Heating mercuric oxide

- (b) Heating potassium chlorate and some manganese dioxide
- (c) Electrolysis of water.
- 5. Decomposed water by sodium.
- 6. Prepared and found the physical and chemical properties of hydrogen. Prepared it by:
 - (a) Electrolysis of water
 - (b) Passing steam over hot metal (iron filings)
 - (c) Placing sodium on water
 - (d) Placing the metal in an acid ($\text{Zn} + \text{H}_2(\text{SO}_4)$).
- 7. Distilling of water to get chemically pure water.
- 8. Water of crystalization.
- 9. Preparation of crystals such as copper sulphate, iron sulphate, sodium chloride, etc.
- 10. Prepared chlorine and found it to be a gas heavier than air.
- 11. Found some uses of chlorine:
 - (a) Bleaching agent
 - (b) Disinfectant when used in small quantities
 - (c) Poisonous gas when taken in large doses
- 12. Prepared hydrochloric acid.
- 13. Tested for chlorides with silver nitrate.
- 14. Tested for bases and acid with:
 - (a) Lithmus paper
 - (b) Congo paper
 - (c) Phenolphthalien
- 15. Learned to calculate the volume of gases given off in reactions.
- 16. Learned to calculate the weights necessary for reaction, i. e., such questions as: How many grams of zinc will it be necessary to use to get fourteen grams of zinc sulphate?

LUMINOUS PAINT

from Bob's Science Note-book

When I and my friend started out to make the paint we didn't have any chemicals so we had to go and get the following chemicals by weight:

This should be luminous	{	10 parts of gelatin
		40 parts of hot water
		1 part of glycerine
		27 parts of calcium sulphide
		3 parts of bismuth subnitrate

We tried the calcium sulphide and bismuth subnitrate in these proportions $\frac{3}{4}$ $\frac{1}{2}$. We heated these formulas for about fifteen minutes. We looked up another formula and this is the way we did it. We got some shells from the beach and crushed the shells to a powder. We took:

- 6 parts of shell powder
- 6 parts of sulphur
- 2 parts of starch
- 8 parts of bismuth subnitrate

and 8 parts of water and shook them together until it was dissolved. Then we poured it in and mixed it with the other chemicals. Then we took five parts of alcohol and added a few drops of hydrochloric acid and mixed it with the rest of the chemicals and left it for about a few minutes to let the alcohol evaporate, but the alcohol was not evaporated and it spoiled the mixture.

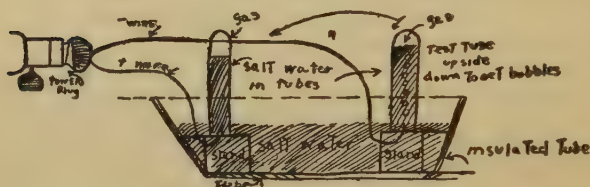
The next time we tried it we let it evaporate for about four hours. It got a little bit burnt on the top, but while we were heating it the black disappeared. We kept on heating it for about twenty minutes. When it was cold we scraped the top layer of calcium sulphate off and threw it away. Then we mashed up the rest and heated it for twenty-five minutes and we let it cool. Then we added some alcohol and took it into the dark, *but it did not shine!*

Our science teacher bought some calcium sulphide and zinc sulphide and we took some calcium sulphide and ex-

posed it to the light for about five minutes and then took it into the dark. It shone with a purple light for about twenty minutes. Then we took some zinc sulphide and exposed it to the light for five minutes and it shone way better. It was green to make paint.

ELECTROLYSIS

from Ben's Science Note-book



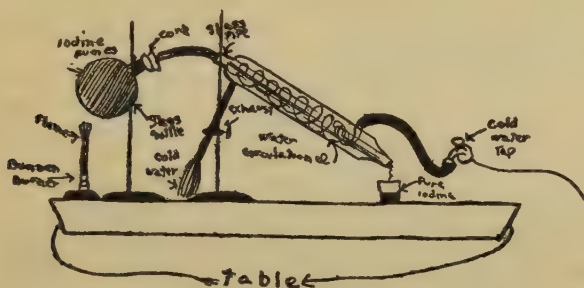
This diagram shows how to make hydrogen and oxygen. Hydrogen is $+$, and Oxygen is $-$. With electricity the two wires are plus and minus so hydrogen being a plus goes to the minus wire. Oxygen being minus goes to the plus wire. The way we did this experiment was like this: we took an insulated tube and put some salt water in it so it would be a conductor of electricity. This done, we put two test tubes upside down to get the bubbles that came from the two wires. One will be hydrogen and one will be oxygen.

IODINE

from Ben's Science Note-book

We put iodide of potassium, manganese dioxide and sulphuric acid into a pyrex bottle and put the cork in quick. The acid began to mix with the other stuff and made a purple fume. To help it along we heated the bottle. The fumes went through the glass pipe and in the distilling machine the fumes striking the cold tube in the machine turned into liquid and ran down clear through

and out the other end. The water circulation is to keep the pipe cool.



MERCURY

from Paul's Science Note-book

First we took some mercuric oxide (1) and put it in a flask. Then we put a cork with an L tube attached to it in the flask and to the L tube we attached a rubber tube, and one end of it we put under water. We heated the mercuric oxide and this is what happened: $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$.

The oxygen went up through the tube and came out of the water in bubbles. We tested it by putting a glowing splinter in it, which immediately flared up, and proved that we had oxygen and in the flask we had pure mercury.

Mercury is the only metal which you can get the oxide out of by heating.

(1) Mercury rust.

HOW WE MADE H_2 BY ELECTROLYSIS

from Paul's Science Note-book

First we took a rubber trough (1) and filled it with water. We put a little salt in the water because plain water would not conduct electricity. Then we took two wires and put them in the salt water. From the negative wire

came $+H_2$; from the positive wire came O_2 . We got more than twice as much H_2 because there is more H in the water and also some O_2 was used by wire.

(1) We used a rubber trough because any metal one would conduct electricity.



CHAPTER XI

DRAMATICS

The group came back after Christmas proclaiming in chorus, "We want to talk about a play!" "No Indians, we want a present day play," was repeated over and over, but constructive suggestions were lacking at first. I had had in mind that we might make up a play about the American Revolution, but this met with no favor. Other suggestions I made to start the ball rolling, such as present day immigration or a play on the Industrial Revolution, were likewise turned down, but out of the discussion emerged gradually the idea of an industrial play. "Something about miners," was proposed and there was some idea of basing the play on the gold rush to California. The girls caught hold of this idea in the hope of making it into a sort of historical pageant of gold mining which would include the scene about the Aztecs which they had been longing to do. The boys were inexorable, however, about "No Indians." At last someone hit upon the idea of a coal strike and all united on this.

We discussed in general the modern organization of industry as compared with the craft guild organization they knew through their printing experience of the previous year, but we did not go into details of any labor problems. I was not at all sure that they would stick to this plan, but by the next morning, the idea had taken definite form.

Bob said, however, that we must "have more material before we can make up the plot." He was so eager to get at this that he offered to go home at once and collect some books from his father, who is an economist. While he was gone I read aloud to the group a description from Cooke's *Visit to a Coal Mine*, the only thing I could think of on the spur of the moment! They followed every word with intense interest. Bob returned beaming, with an armful of books on *Miners' Wages*, the *Bituminous Coal Industry*, and *Conservation of Natural Resources*, and he showed us a date on a fly leaf "December 17, 1925" to prove he was bringing us "good, up-to-date stuff."

For about two days we continued the reading of concrete descriptions of coal mining. Then we discussed the origin of coal, the different kinds, especially anthracite and bituminous, the difference in mines due to depth and accessibility of the seams, the influence upon prices of the cost of production in the poorest mines worked; ("Some coal owners must make big profits." "That's their good luck!") Further discussions dealt with the effect on wages of competition for jobs among miners, collective bargaining and union organization, organization among employers, competition between union mines and non-union mines, company stores and houses, labor spies, and evictions in time of strike. Finally, out of all this an outline for a play began to appear, the suggestions coming so fast from every corner of the room that it was impossible to say who thought it out. As Marshall expressed it, "One person says something and that makes you think of something else and we all have to make it up together." Catherine caught upon a suggestion I threw out about the important

part women play in a strike and proposed having two wives of different types, one who would encourage her husband to "stick with the boys," and the other timid and hopeless who would beg her husband to go back to work. She chose the fighting part for herself and Ellen accepted the other with interest. "It will be hard to act timid when I don't feel timid," she commented, "but anyway I am going to have a lot of children, and I'll say to Catherine, 'It's all very well for you to talk with only one baby to worry about, but what would you do with five?'"

The rough outline finally decided on was dictated to me chiefly by Paul and Marshall, as follows:

Scene I. Wash-room of a union mine. Marshall and Bob are washing up. Other miners come in dirty and start talking about wages and new contracts and decide to send an organizer to non-union territory.

Scene II. In a non-union mine, the main gallery. Work is stopped because a car goes off the track. Miners gather and complain—dead work not paid for—unfair weight—organizer gives "the union dope," (Union has check weighman, dead work paid for, pit committee to take up grievances.) Paul is interested. A spy (Ben) overhears talk.

Scene III. In a miner's house. Paul and Catherine live on first floor, Adam and Ellen upstairs. Adam and Paul talk over the discharge of the organizer and say he is coming to-night to help start a union strike committee. Ellen begs her husband not to join. Marshall and other miners come in and start meeting. Sheriff comes in and breaks up meeting; threatens eviction from company house; organizer escapes; Ellen cries.

Scene IV. This starts off in the fields, in the tent where

Ellen and Adam live. They talk of food getting low. A relief box arrives. Catherine distributes. Marshall tells of arrival of scabs. One joins strikers. Mine foreman enters Ellen's tent and urges her to persuade her husband to go back.

The rest was not planned in detail, but was to include a refusal to go back to work without recognition of the Union and reinstatement of strike leaders, ("It would be too treacherous to do that.") Also a final scene in the bosses' office at which the union agreement is signed and the strike won.

Paul said that he liked the plot better than any play they had ever had because "there is no special hero." He, Bob, and Marshall all wanted to be the organizer, but it was settled amicably among themselves to give Marshall that part and let the other two be moving spirits in the new union. Harry was the only one in the group who did not like unions and he said so frankly. They offered him the part of a boss, but he preferred to be a miner. He asked each day for literature to take home to read up about the coal situation and enjoyed Powers Hapgood's *Diary of a Non-Union Miner* and several Civil Liberties Union pamphlets on the West Virginia strike as well as some scathing pamphlets on labor lawlessness and violence sent us by the Coal Operators' Association. I read aloud part of the Hapgood *Diary* to the whole group as it gave so much vivid detail of actual working conditions, and Marshall, Mary, and Ben finished reading it by themselves.

Paul, Ben, and Marshall became intensely interested in working out a model of a coal mine in clay. They broke up their first attempt and made a better one which they lighted with electric bulbs. They also made a car

and some little wooden miners to fit and laid tracks in the main tunnel. They were very hilarious over their work at first and rather upsetting to the rest of the group in the clay room, but their interest itself steadied them in the end.

Meanwhile, Mrs. Mitchell had suggested taking advantage of the interest in coal to introduce special work in map making and offered to help. She had been experimenting herself in making transparent maps which, when superimposed one on another would bring out interesting correlations and she suggested to the children that they might do this for different factors in the coal situation. All were eager to try it and a large part of every morning was spent on collecting the facts and getting the technique of the map making started. Marshall, Paul, and Ben chose to show the distribution of union miners; Catherine, the distribution of coal; Harry, mine accidents; Mary, coal substitutes, such as water power, and oil; Edward, physical relief features. Bob and Adam instead of maps, made a line graph showing the use of the coal actually produced. They insisted on making their graph on a scale large enough to be accurate to .1 per cent though they had to paste together several sheets of squared paper to do so. Mrs. Mitchell gave them no help at all beyond showing them a sample of a line graph on another subject and supplying them with a United States Census report containing the figures they needed. They did the rest with ease. At the end of the week all the maps were brought together and the facts discovered were pooled in a general discussion.

Mrs. Mitchell asked everyone at the end of this discussion to write down what we had discovered and what

things we needed more information to explain. The following week she continued the discussion of questions raised by the children's papers. These concerned chiefly the frequency of mine accidents in particular districts and the relation of coal deposits to physical relief. There was also some discussion of housing conditions in mining camps based on pictures in the United States Coal Commission report. Another discussion, based on the children's maps of physical relief and coal distribution, took up the problem of getting coal to the industrial centers. It included the discussion of canals, railroad building, and the importance of the Great Lakes for exchange of freight. Paul said that finally "people went out West to get the coal" and settled there. Marshall said Chicago was the result.

The greatest help we had in planning the play came through our good fortune in establishing several contacts with people who knew the labor situation of the miners at first hand. Mr. Lane, one of the school parents who had been in West Virginia during the strike of 1922, came in one afternoon and in the course of an informal discussion with the group, gave them many vivid pictures of what actually goes on in the particular situations they had in mind. They asked him especially what the miners would do during a strike and what would make the owners ever give in. He was very careful to avoid sensationalism and to be fair to the operators in all his accounts and emphasized the difference in individuals in their treatment of their employees.

Another day a real miner from Brookwood Labor College came in by our invitation in time to lunch with the children and spend the afternoon. The boys tossed coins

to see which table could have him as a guest. After lunch he talked for an hour and a half while everyone in the group crowded around to see his sketch of the mine in which he had worked. Several details in the play were added in consequence. They all showed him the maps they had been making with Mrs. Mitchell, and Marshall, Ben, and Paul produced their clay model of a mine.

After this, Roger Baldwin who had also been in West Virginia during the last big strike happened to be visiting the school one day and was prevailed upon to talk to the group about what he knew of the coal problem. He introduced for the first time the miners' growing demand for public ownership of the mines and the control of many mines by New York banking interests. He also told how the Union had been almost destroyed in West Virginia since the strike and described the policy of lock outs in one district after another. Bob was so much impressed by this tragic ending that he wanted to change our play by the addition of another act showing this sad sequel and the broken-hearted miners forced to leave their homes. Harry hailed this proposal joyfully, but no one else would stand for it at all. Paul was most vehement of all in insisting on a real victory for the Union.

Only during the last week in January did the children actually begin to rehearse their play. A visitor happened to be present the first day they tried acting, but no one was in the least embarrassed by his presence. The first scene was acted over and over before going on to the next and the dialogue kept improving each time. Scenery was discussed with great interest and all agreed that special care could be given to that since costumes would not demand much time or expense. Edward drew on the black-

board a sketch of his suggestion for the mine scene and it was accepted readily by all. He joined quite freely in the play conversations and took great interest in all the details.

At this stage of affairs Leo, Polly, and Ellen developed measles, so all three had to miss much of the preparation for the play and all rehearsals were held up partly on their account. Adam, too, was out of school for a long time on account of ear troubles. Mary who had just come into the group was shy about joining in dialogue unless directly drawn in and so was Anne. On Catherine's comment that "it is bad to have them just sitting quiet" special efforts were made to include them. Harry became so much interested that he made special arrangements to come back to school after lunch on the afternoons when Mr. Lane and Mr. Corazza, the Brookwood miner, were there. His coming to school, even for the morning session, was somewhat of an experiment as he had been seriously ill. He joined in all the work, however, except the vigorous exercise in rhythms, and gained steadily in weight and color. He often returned to school at three o'clock for the after-school period in the laboratory and yard.

During February the first hour in the morning was usually spent on planning and rehearsing the play. Each act was worked on separately until the group was satisfied that it was in sufficiently definite form to go on to the next. Although the children wrote spontaneously many stories about miners (see pages 185-188), they could not be persuaded to put the play into written form. Polly, however, did bring in one morning an outline for the fourth act, including the dialogue for a scene between Ed-

ward and Mary which had not gone well in rehearsal. Paul was enthusiastic over the help given by Polly's outline and all wanted to try rehearsing it at once. They went through it twice until a real form emerged. The dialogue was still poor, however, and Edward and Mary seemed completely at a loss until Edward took Polly's written dialogue to study for suggestions. As Bob and Mary played Adam's and Ellen's parts while the two latter were out sick, they became so familiar with the parts that the group decided it would be better for them to keep them. Adam and Ellen, therefore, worked out new parts for themselves to fit into the main outline.

The first three acts were now going so well that Ben suggested they should "lay off on those so as not to grow stale," and work on the last two. Paul, Ben, and Marshall really carried all the dialogue and action and made most of the new suggestions. Harry, next to them, contributed most. Paul thought the fourth act was "not sad enough." He was puzzled about how to explain the change from hopefulness to discouragement and suffering. I suggested the device of dropping the curtain to show passage of time and stating this on the program. This plan was accepted and a second scene added in which every one was dejected. One of the strike committee had given in and gone back to work following the death of his child.

To liven up the play the boys introduced several funny stories into the first part of the scene in the mine when the men gathered in the main tunnel. Also in the next scene in the miner's house, Miss Pratt suggested more light social talk between the miner's wife and the organizer who comes to supper. Both Catherine and Mar-

shall, though self-conscious at first, arose to this and passed compliments back and forth till Paul, as the husband, called a stop to the flirting!

The boys proposed a trip to the Natural History Museum to visit the model showing the workings of a copper mine. All the children were intensely interested in every detail of this, comparing it to what they had read of coal mines, and to the clay model made by Paul, Ben, and Marshall. After seeing this, they broke up into small groups to visit various points of interest and agreed to meet at a specified time at the main entrance of the Museum. All were there when I arrived at the meeting place. The boys, led by Bob's enthusiasm, had visited chiefly the Eskimo rooms, while the girls had spent their time over the groups of bird and animal life in various geographic environments. They were particularly interested in seeing pictured the land formations in Florida and Virginia which they had read about.

Toward the end of February the play seemed well under way, so we decided to give up morning rehearsals entirely. We kept the two afternoons on which we had no science or mathematics appointments for work on the play, and started the scenery. The group was eager to make a permanent curtain for use in all school plays. As Ben's plan for attaching this called for bolts put into the plaster walls of the gymnasium, Miss Pratt advised our consulting the building contractor who does the school work. He approved Ben's ideas and thought that the boys could carry out the plan successfully alone. They did enlist the help of the science teacher, Mr. Paley, however, and worked out with him a system of pulleys by which the curtain could be put up or taken down without the use of a ladder.

Ben, Adam, Bob, Paul, Harry, and Mr. Paley were the ones who actually carried out the plan one afternoon.

Meanwhile, Catherine and Mary worked out a clay model for the strike scene showing a mountainous background with tents and trees. Bob took home yards of unbleached muslin and stitched the strips together by machine to make it wide enough for scenery. Marshall and Leo went on a very successful shopping trip for more muslin and found some wide enough for our use without stitching, thereby causing universal rejoicing. Marshall, Paul, Ben, and Adam went off by themselves one day to work on scenery plans and came back with a drawing showing their plan for an interior scene with hinged wings. The school doorways were carefully measured to be sure of getting the scenery through safely and all measurements for scenery were written down in the secretary's book for future reference. After careful comparison of sketches and discussion of ways and means, we all decided with relief to use the same scenery for all three acts which needed interiors. For the necessary variation, we added separate furnishings instead of painting them on the scenery. The aforementioned four boys forthwith set to work on the frames for their set including a real door in one of the side pieces. They covered the frames with unbleached muslin which they painted a carefully mixed cream color to provide a neutral background. Harry, too, helped in the painting.

The chief problem connected with the play itself was still that of avoiding an anti-climax at the end. Harry felt that there ought to be some suggestion of violence between strikers and scabs or company police. He introduced an episode in which he and another miner, without the knowl-

edge of the strike leaders, undertook to "beat up" the hated company spy. This resulted in his being shot by the detective; the children experimented in several rehearsals with quite a melodramatic scene of his death at the moment when the sheriff appeared to arrest him. It was very poor and I tried to persuade them that they were attempting something too difficult, but they were insistent that "such things do happen in a strike." They only gave it up finally because they wanted the act to end on a joyful note with the unexpected message from the operators that they would deal with the union committee. Paul, especially, felt the sudden transition from a death scene to the hope of victory impossible to handle with conviction. Harry consented to escape with a wounded arm and to take to the woods to avoid arrest.

Marshall, Paul, Harry, and Ben continued to try out various ways of managing the last scene in which the strike settlement was to be drawn up. It was still unsatisfactory, but Ben proposed that since the main outline of the play was so well in hand, we should "lay off rehearsals altogether for a while so as not to get stale, and work on scenery." All agreed and chose him for general manager to organize work on the scenery and properties. Marshall proposed having the programs multigraphed instead of printed. He had done some multigraphing for the school office and found the process much easier than printing. I raised the question of getting a good stencil cut, whereupon Marshall enlisted the services of his aunt who is a typist. He undertook to gather together the material for her and the class all together worked out their play names. Catherine made a complete list of them for Marshall. The question of a name for the play came up and everyone

who had a suggestion to make wrote it on the board. *The Fight for the Union* and *Stick It Out* were the two favorites, and the latter name was chosen by a vote of 12 to 2. Bob and Edward felt strongly that the "Union" should be included somehow in the title and held out for this until out-voted.

Bob, Mary, and Ellen went on a shopping trip for samples of material for the new curtain and for the mine scenery. Meanwhile, Polly, Anne, and Catherine made sketches and paper models for stage settings. Mary, too, became interested in this. As no satisfactory samples of black material for the mine scene were found by the shopping committee, Ben, Marshall, and Paul proposed dyeing the unbleached muslin. They tried a sample first, and finding it approved by the class, dyed the whole piece. Bob and Paul made frames for it after the model of a picture Edward discovered in the Book of Knowledge.

The last few days before spring vacation were spent almost entirely on scenery. Ben organized all the work by reading a list of jobs made by Edward the day before in consultation with Leo and me. He and Adam undertook to make wash basins for the miners' wash-room in the first act and went out to buy tin basins which they set in wooden frames. Polly and Mary were eager to make the kitchen stove and hunted in the cellar for a box to use as a foundation. They worked independently in their own shop. Edward wanted a transparent window for the interior scenery and got from Mrs. Mitchell some of the moving picture film material that she had introduced for map making. He knew exactly how it should be put in and I helped under his directions.

The greatest difficulty that arose was with a design for

the out-door scene. Bob had brought a tent from home and this was put up and used in several rehearsals in the gymnasium to be sure it was practical. Catherine and Ellen tried some designs for trees on beaver board, but the class was very critical. All agreed that the background scenery ought to be worked on first. Catherine, Ellen, Paul, and Leo submitted designs for this and Leo's was chosen for the general outline. Details were to be added from the other sketches. Leo, who had always been weak in hand-work, was tremendously interested as well as surprised at finding himself entrusted with the responsibility of putting his design on the muslin. He even gave up a mathematics appointment, in order to go on with the painting. Paul came into the room while Leo was drawing in the distant mountains and commented that "they look too much like the Rockies. Appalachians are round with level tops, don't you remember?" Leo changed his outline to conform to this reminder of one of Mrs. Mitchell's geography discussions. Meanwhile, Catherine and Ellen added the trees that were chosen from their designs; Marshall offered to put in "another kind" which was approved by the class. He also succeeded in making changes in Leo's tents that satisfied some class criticisms as to the handling of perspective in drawing the tent ropes. Anne spent a great deal of time mixing colors for the mountains. She and Paul painted the big scenery while Ellen and Catherine painted a wing. All the time this painting was going on Bob sat off by himself completely absorbed in writing his long story.

In spite of this interest in scenery work every one, with the exception of Leo on the day mentioned above, was eager to keep the usual appointments for mathematics and

science and asked to be called in time. Even on the days when Mr. Kusner was not there, Ben and Paul asked to take time off from the play work to finish their range finder.

About this time the boys came up from lunch one day asking if the group might have a "private meeting" as there was something they would like to discuss by themselves about which they would tell me later. I agreed, of course, and after a few minutes they came for me and told me that they had been discussing swearing and smoking in the play and that they felt both were really necessary to make the play go. I thought smoking would be out of the question, but agreed to their going ahead with the introduction of some swearing in their rehearsal. They carried it off with fine seriousness of spirit. Paul was enthusiastic over the way it "pepped up the play." When we consulted Miss Pratt, however, she brought up the question of the effect it might have on the younger children in the school whom we proposed to invite to see the play.

All of us recognized this at once as an unanswerable argument, but the group, led in all the discussions by Marshall, Paul, Ben, and Harry, made a compromise proposal: to leave out swearing in the afternoon performance for the children and include it for the evening performance to be given for the parents. "*They* ought to be able to stand it anyhow!" Marshall added the suggestion of an introductory speech warning the audience that it was a play of rough men. If the talk seemed pretty rough, they hoped their parents could stand it for once and not blame the school for it! Miss Pratt capitulated at this and the swearing was decided on for the evening performance, but all agreed that it would not be safe to try it in rehearsals, as

they might forget and use it for the younger children's performance. The problem of the use of tobacco was less easily settled. Miss Pratt stated plainly her disapproval and her feeling that it was not an artistic necessity, and might, on the contrary, spoil the play by making the actors sick. She could get no hearing at all for her arguments. "If you tell us we can't, of course we can't," was the only response. As she felt anxious to have the children in some way work it out for themselves the question was left somewhat in the air, with a strong determination on the part of the boys to put it through.

Harry suggested charging admission to the play and giving the proceeds to the strikers in West Virginia about whom we had been reading in a Trade Union monthly bulletin. As Harry had been the one member of the group who had said throughout that he did "not like unions" and had been consuming quantities of the anti-union literature sent us by mine owners' associations, this suggestion from him was rather surprising. All were interested in the proposal and no comment was made on his change of attitude. Paul thought instead of charging admission, we might have the miners from the play go through the audience to take up a collection after explaining that no one need feel obliged to give anything unless he were really interested. This idea was finally dropped, however, partly due to the fact that I discouraged it in favor of continuing the usual school custom of free entertainments.

On returning from the Easter vacation, Ben, as stage manager renewed preparations for the play. The group broke up to work on their individual jobs for the first half of the morning. Bob and Paul continued work on frames for the mine scene. These frames they covered with

black muslin, leaving an opening in the center to represent the tunnel of the mine in which the action took place. A second rectangular frame connected by poles with the main frame, formed the back of the tunnel. The whole was completely lined with black muslin. A great deal of experimentation and ingenuity went into this work and into making the whole set stand securely. Adam's expert assistance was sought and the final result was so firmly made that it even survived frequent use in rehearsals. Marshall and Ben secured faucets from the school janitor for their wash-stands. The latter were painted white to represent porcelain.

Ellen and Polly finished the stove, making a back piece of black beaver board and painting the box. Catherine and Anne went to work again on the scenery for the act in the open fields. All showed great timidity in attacking this painting and a distressing realism in detail. It was a discouraging contrast to the boldness of color and design shown by the younger children, in the school but Catherine, Ellen, and Polly finally toned up the scene by the addition of some bright colors in the foreground. Nearly all this work on scenery was done in the afternoon periods for individual work, but occasionally particularly difficult problems were attacked during the first hour in the morning. I came in about ten minutes late one morning and found that Ben had already organized the play work for the day and all were starting on their jobs in good order.

Polly produced the most beautiful piece of scenery of all by painting a large fir tree on beaver board for a side wing. Even the most critical ones in the group admired it generously. She worked entirely alone in the classroom in

producing this. As the time for the play drew nearer Polly came more and more to the fore in her contributions both of ideas and properties and her interest was more lively than it had been at any time in the year.

Catherine asked one day for help in making a frame for the field scenery after school and Edward volunteered to help her. This was greeted with laughter and comments from the other boys on Edward's trespassing on "Paul's property." This was the first open sign of sentimental interest in the group, but Marshall's embarrassment over bantering compliments with Catherine in the play suggested interest on his part, too. Catherine herself appeared quite unconcerned.

Meanwhile, the problem of the stage curtain loomed large. Catherine and Ellen shopped for more samples; Harry and Edward also shopped another day after school, and I brought in still others. Difference in prices and in the width of material necessitated careful calculations. Several otherwise satisfactory samples had to be discarded because they proved too expensive. Finally, Mr. Zorach, one of the school parents who had had a good deal of experience with stage scenery, was called in for advice. Other classes in the older school were consulted and asked to contribute out of their business earnings to the expense of the curtain. Green sateen was finally decided upon to the satisfaction of all and every one in the group with the exception of Ellen and Edward took pieces home to stitch on the machine. Catherine and Polly worked together with great enjoyment. Bob and Colin also combined efforts as did Ben and Marshall. In this way ten strips, each sixteen feet long, and twenty yards of hems were stitched by the children inside of a week, and ten shorter

strips with another twenty yards of hems were added for a valance. The finished curtain and scenery were all used in rehearsals the last week before the play.

When the date was finally set for May the seventh and the children started to send out invitations, Paul was overtaken by panic for fear we would never be ready. Costumes worried him particularly, but Mr. Paley came to the rescue by providing long trousers for all who needed them.

As Harry showed signs of a loss of interest in the play and a tendency to make it a burlesque, I asked him if he would like to drop out. He said yes, he "never did like this play anyhow," and the group at once put Leo in his part. Later I asked if he really meant this and he stuck to it, although he was in a more agreeable mood by this time and said that he was quite willing to go on with the play if the others felt that they needed him. When his offer to do as the group wanted was put up to them, Ben voiced the general feeling in saying, "No, let Leo do it. The spirit is the important thing."

Wednesday mornings were taken for rehearsals all through April as the gymnasium was free on this day. There were only one or two other rehearsals of special acts in addition to these weekly ones. The last week of the month I read aloud for a while each morning from *Men and Steel*, (Mary Heaton Vorse's account of the steel strike), in order to give the children a feeling of strike atmosphere. "Go on, this is good," was the reaction from all, including Harry. He and Marshall picked up the book at intervals and read more for themselves. They all realized that "this book certainly was written by a strike sympathizer," but enjoyed very much the vivid human interest and local color.

Several details, such as white curtains in the windows of strikers' houses, and mob caps, worn by women to keep the dirt out of their hair, were adopted by Catherine and Polly for use in the play.

When everything else was ready, Ben proposed work on stage lighting and he, Marshall, Bob, Paul, and Harry went to the laboratory to consult Mr. Paley. Bob and Paul hunted up some five gallon tin cans to use for spot lights at Mr. Paley's suggestion, cleaned up the cans and set sockets in them, while Marshall and Ben went to the shop to make stands for these and a frame for footlights. Edward showed a fine spirit about all these preparations, ready to give up his own plans at any time when his help was asked for by the rest, but never excited or unable to go ahead steadily on other work when not needed for the play. Harry enjoyed the work on the lights most of all, and he and Paul worked in the laboratory up to the last minute, experimenting with different colors. Harry was very tense and excited toward the end, however, and could not work as well as usual.

Ben bought a black cap and a small electric flash light at the Ten Cent Store and brought it in as a sample for the miners' caps. All approved and Marshall volunteered to buy more for the group over the week-end. Only Bob preferred to get his own. He found the supply in the store exhausted, so made himself one out of black muslin with a bit of cardboard for the brim. There was consternation when Marshall reported that he, too, had found the store out of hats. Polly suggested using white painters' caps she had seen in another store and dyeing them black, so went to see if she could get a sample to try. She came back triumphantly with the black caps and she, Marshall, and

Ben worked after school at Marshall's house attaching the flash lights to them. On her own initiative Polly succeeded also in borrowing many of the overalls needed for the boys' costumes as well as her own costume. Mary collected hers for herself and Catherine and Ellen borrowed from some of the teachers.

Then came the catastrophe! Two days before the date set for the play, Mary developed symptoms so suspicious of whooping cough that the school doctor decided that she would have to be excluded from school pending further developments. Ellen, too, was quarantined as a suspicious case. We were all in consternation for there were several other members of the group who had not had whooping cough and if they should come down with it the play would be wrecked indeed. The only chance seemed to lie in going ahead as planned and putting in substitutes for Mary and Ellen. Polly made a few adjustments in her own part as a miner so that she could also carry Mary's part, and did it extremely well in spite of her reluctance to play a part she disliked so much as that of the timid wife. Anne, in the same way, took over Ellen's part. They had only one opportunity for rehearsal before the play was given, first, at an afternoon performance for the school audience, and again the following evening for a specially invited group of their parents and friends. It was the first time any school play had been given in the evening. The children, however, felt strongly the impossibility of a proper effect for the mine scene in broad daylight so obtained special permission for this new departure.

The problem of scene shifting was a difficult one, but they had practised it so often and understood every detail so well, that they decided it would be better to keep it

in their own hands rather than to call in outside helpers from another class as I had suggested. As few changes of costume were necessary between the acts, they were able to handle it very well, and I was amazed to find how insistent they were on doing it without noise. Adam was sternly reprimanded even at the dress rehearsal for "getting excited and screaming." Paul filled in the longest wait by a monologue in German accent which had been a great favorite with the class all the year. He tied it up very cleverly with the spirit of the play by telling it as a story about a German miner who used to work in that mine. The children were all so immersed in the story of their play that no one would tolerate for a moment anything that seemed out of keeping with it—even between the acts.

Marshall made an announcement before the play began, warning the audience not to get mixed up because nearly everybody was playing several parts, especially in the first two acts; but he forgot to add to it for the evening performance the apology he had planned for "strong language." That had no deterrent effect, however, on the language itself! Not a word had been said for weeks about the smoking, and I was congratulating myself on the thought that the interest had died a natural death for lack of opposition. But on the evening of the play every boy, except Bob, turned up with a bag of tobacco and lighted his corncob pipe with the nonchalant air of an old smoker. They were intensely excited over the adventure of it, and it did somewhat divert the attention of the chief actors, thereby slowing down the action of the play in spots. In spite of this it seemed to most of us who were present a very worth-while part of the whole performance that these

adolescent boys should find a satisfying adventure in this dramatic experience along with teachers and parents who were enjoying it as much as they were. They had taken pains to consult their parents about it and to obtain their consent (though hardly their approval), so that no one would "blame the school."

In its final form as presented, the play followed pretty closely the original outline, though the actual dialogue changed from one day to the next.

The program worked out by Marshall was as follows:

STICK IT OUT

ACT I. Wash-room of a Union Mine.

ACT II. Non-Union Mine of the Wolfe Creek Coal Operators.

ACT III. Tom Williams' House in the Wolfe Creek Mining Town.

ACT IV. In the Fields just beyond the Company's Land.

ACT V. The Wolfe Creek Coal Operators' Office.

CAST OF CHARACTERS

MIKE ANGOLO, (<i>the union organizer</i>)		Marshall
		{ Ben
		{ Bob
		{ Edward
OTHER UNION MINERS		{ Adam
		{ Paul
		{ Leo
		{ Polly
MACK (<i>a labor spy</i>),		Ben
TOM WILLIAMS (<i>the local strike leader</i>)		Paul
JANE WILLIAMS (<i>Tom's wife</i>)		Catherine

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BILL MCGLOUSKY (<i>a striker</i>)	Bob
HANNAH MCGLOUSKY (<i>Bill's wife</i>)	Polly
SPUD } <i>strikers</i>	{ Adam
SPIKE }	{ Leo
FRANK ARROW (<i>the mine foreman</i>)	Edward
FANNY STEWART	Anne
MR. McDAVITT } <i>mine owners</i>	{ Ben
MR. PHILIPS }	{ Leo

In the following description of the play, the children's own names are used rather than the play names in order to make it easier to follow the part taken by individuals. The value of dramatics from the school's point of view lies, of course, in what the individual children get out of the experience rather than in the objective value of the play produced.

As the curtain was drawn on the first act, Marshall and Bob, as two miners, met in the wash-room cleaning up after their day's work. Bob began by asking his companion why the latter had not been at the union meeting the night before. Marshall answered that he had had to work at blasting after hours and asked what had happened at the meeting. Thereupon Bob, in real excitement, went on to tell him that "the bosses wouldn't sign the wage contract. They said if those other mines would pay the union wages, they would, too. So we decided to go on strike and we are going to send an organizer down to that non-union territory to get those fellows to join us." The other miner expressed a vigorous approval, but was somewhat taken aback to learn that he himself had been selected for this difficult task. At this juncture more

miners entered, all full of excitement over the coming strike and the plans for winning the support of the non-union men.

As one after the other finished washing, put on his coat or necktie, brushed his hair, and went off home, Ben called Marshall off to a corner to give a piece of advice. "They're a tough crowd down in that non-union territory. I went down there myself once to try to do some organizing," he began, draping himself in a leisurely way over a washstand. He went on to tell how he had been met at the train by a "man on horseback with a revolver and C. and I. on his cap. I found out afterwards that that meant Coal and Iron Police, but I didn't know it then. He came up to me and asked me what I was doing there, and I said I was looking for a job 'You a union man?' says he, and I didn't know any better, I blurted right out, 'Yes, from District No. 3.' 'Well,' says he, 'this is pretty unhealthy country for union men, you better get right out of here on the next train.' I couldn't do anything. He had a revolver, and I had to get out." Marshall agreed that it would be a tough job, and added that he had heard the Company also had regular spies there working in the mines, so that a fellow couldn't tell who was a friend and who was an enemy. On this note of warning the first act ended.

The second act opened with weird blue lights thrown on the black setting of the empty mine tunnel. Gradually the lights of miners' caps appeared, two by two, in the background as the men came out from their stalls into the main tunnel to complain that "the old car's off the track again," and to spend their enforced leisure in snatching a bite of lunch and cracking jokes with one another. Finally the talk drifted into complaints of conditions in the

mine. Bob told bitterly of having worked "for two days on dead work, putting up props and pumping out water and never got paid a cent. I've got a wife and five children to support, and I don't know what I'm going to do." Paul said that he was sure he had not been getting fair weight for the coal he had mined and added that if you complained to the foreman he told you to "get out if you're not satisfied and go somewhere else." Marshall, in the part of the union organizer intervened here urging, "What you fellows need is a union." At this Ben rose to his knees with the question, "Say, are you a union man?" All through the organizer's exposition of the benefits of a union, he kept himself well to the fore, leading Marshall on with words of approval. Paul, too, got up in his genuine excitement over the organizer's news of the coming strike and was about to ask more when the mine foreman appeared, calling: "The cars are running. Back to work everybody." In the general exodus, Paul drew the organizer aside for a moment to make an appointment for the latter to come to his house an evening the following week "to meet some of the fellows and tell us more about this." Ben lingered until he found himself alone with the foreman when he revealed himself as a company spy by telling the foreman that "the new man you put in here is talking union pretty strong. You'd better see to him."

The next act took place in Paul's house on the evening when he was expecting the organizer to supper. Catherine, as Paul's wife, was ironing a white curtain for the window as the scene opened, while Polly, playing Bob's wife who lived upstairs in the same house, sat rocking two of her five children in the background. Catherine was full of excitement over the coming strike and the hopefulness of

"going in with the Union." Polly was frightened at the prospect and hoped *her* husband would not get into it for which cowardly sentiment she was warmly rebuked by her friend. As the latter hung up her clean white curtain at the window, she explained that the organizer was coming to supper that evening and there was going to be a meeting afterwards to form a strike committee. The other woman protested that she ought not to let them meet in her house, there would be trouble. She did consent though to come down after her own supper and help wash the dishes.

Here the husbands entered, Paul full of enthusiasm over the way things were going: "We've got seventy-five men already on our side." But he was worried for fear the organizer from the Union would not be on hand that evening. "You know," he told his wife, "he's been run out of the county. After he got kicked out of the mine he kept coming around talking to us fellows until the company police told him to get out of the county or they would arrest him the next time he showed his face around here." This threw his wife back on the mysterious problem of "Who ever told on him, anyway?" Again there was the sinister note of suspicion of a spy among them. Polly began to urge her husband to have nothing to do with the strike, but Bob took her and the babies (two large dolls) upstairs with assurances that "It'll be all right."

A knock at the door announced the welcome arrival of the organizer himself. He was warmly greeted by Paul and questioned as to how he had eluded the company police. "This little false beard did the trick," he explained displaying the disguise which caused great merriment and admiration of his ingenuity. "Took you for a farmer, did

they?" commented Paul. "Well, meet my wife!" Catherine in turn introduced him to a friend of hers whom she had invited to supper on purpose to meet him. This was the part invented by Ellen for herself, but taken by Anne in the final performance.

All sat down to supper together and the organizer opened the conversation by remarking how good it was to sit down to a nice home supper. "You're a lucky fellow," he said to Paul, "to have a wife like that." "What, aren't you married?" came Catherine's retort. "A good-looking fellow like you ought not to have any trouble getting a wife." Marshall kept up the bantering by asking, "Well, have you got a twin sister?" at which Catherine turned the attention off to her friend, saying gaily, "Yes, Fanny here is just like a twin sister to me, she'd make a good wife for you." Amid these pleasantries the men ate their supper in hearty mouthfuls while the two women jumped up at intervals to bring fresh supplies. The talk soon reverted to the serious business of the strike. "How are your gardens around here?" asked the organizer. "Do you can much for the winter?" "No, we bury our vegetables mostly," answered Catherine, "but we'll have some potatoes and other things that'll help pull us through."

As the women started to clear the table and the men lighted their pipes, miners began to arrive for the meeting and the organizer explained that the first thing to do was to elect a chairman. Paul was suggested, and agreed: "If you want me, I'll do my best." Getting pickets was the next order of business, whereupon Leo broke in, "I know how to be a picket all right. All you have to do is to step up to anybody you see going into the mine and sock him in the bean!" "No, don't start anything like that, or

you'll get the public down on us first thing," came the organizer's stern warning, followed by instructions on how to keep within the law in picketing. "If you touch anybody they'll call it assault and if you stand around in a bunch they'll arrest you for blocking traffic." This brought a laugh from all. "That's hot, blocking traffic in this town." The question of a relief committee to look after a fair distribution of supplies was referred by the newly elected strike chairman to his wife. She and her friend Fanny readily undertook to form a committee of women.

By this time the couple from upstairs had joined the company and the talk fell once more upon the idea of a spy among them. "I don't know; but I kind of suspect that buddy of yours," the organizer told Paul as he puffed away at his pipe. "Where is he anyway to-night? He was so enthusiastic about having a union." Paul jumped to his feet in denial of the suspicion. "He's been my buddy for two years, and I won't hear a word against him. He'll be here all right." At this, the door was burst open revealing Ben, the aforesaid buddy. As Paul went to welcome him, crying out, "I *knew* you'd come—," Edward, in the part of the mine foreman stepped forward from behind him, demanding, "What's going on here?" He drew a revolver on the organizer as the latter made a dash for the back door. Leo, carrying out his part of the quick-tempered firebrand, knocked up the revolver which went off with a terrifying report. A lively scrimmage ensued amid the screams of the frightened wife from upstairs; the organizer escaped safely, but Leo was handcuffed and put under arrest by Ben who had thrown off all pretence and displayed boldly his sheriff's badge. Here came in most of the strong language! Paul reproached him wildly for

his treachery and ordered him out of his house. The foreman intervened coolly, "It's not your house, anyway, it's the Company's house. You had no right to have that union organizer here." This brought Paul's retort, "Who cares for your old Company anyway? By tomorrow you won't have us working for you." "By tomorrow morning you'll be out of this house, then," was the foreman's parting shot as he withdrew with the spy and their prisoner.

The miners melted away and Bob led his weeping and reproachful wife off upstairs. Paul and Catherine were left facing each other in silence as they dropped into chairs on either side of the table. The curtain fell on Paul's comment, "It's come sooner than I thought. It isn't going to be so easy after all."

The next act found the evicted families camping in the fields. Polly was cooking just outside the big tent where the two families were living, while her husband and another striking miner were playing cards near by. Catherine was busy inside the tent with one of the babies who was sick, and the two women discussed the problem of the next meal. "Jane, what are we going to cook when this is gone?" "Well, I'm expecting a box from the Union today." "Yes, you're always expecting something from the Union!" "Well, two boxes have come, haven't they?" Meanwhile, the men kept looking up from their cards to wonder, "What's keeping Tom so long? He must be having a tough time with the bosses." Two other miners sauntered in with fishing rods and a catch which they presented to the women asking, "Is Tom back yet from the meeting with the bosses?"

At length Paul was seen walking out slowly from behind the trees of the wings and answered to their eager ques-

tioning, "Nothing doing, boys. The bosses offered us the union wages all right, but they would not recognize the Union and they wouldn't take back the strike leaders, so we refused." There was a chorus of approval from all but Polly. "I think you are fools not to go back. What do you want? They'll give you union wages?"

Shouts from behind the scenes announced the arrival of the box from the Union. Marshall and Adam staggered in with it to the tent where the women took charge of the unpacking amid general rejoicing. Meanwhile the organizer gathered the men together to tell of the arrival of some scabs he had seen at the station when he went down for the box. "They're nothing but a bunch of farmers; they're no miners, but we'd better go see if we can talk to them." "Sure, we'll scare the life out of them. We'll tell them the mine is likely to cave in on them any day. Come on, fellows!" And off they all went hilariously.

As Catherine bethought herself of a sick woman who was in need of food, she started out to take her some of the newly arrived supplies, leaving the other woman alone to finish the unpacking. The mine foreman now appeared upon the scene. "How do you do, Mrs. McGlousky. Where did you get that fine box?" "The Union sent it to us." "Well, I don't think it'll do you much good. The mine is going to open again tomorrow. We've got plenty of new men to work it and we're not going to take back any of those strikers. I feel sorry for you, though. You've got five children, and if you could get your husband to come back tomorrow, I'll give him union wages and the best room in the mine." "Oh, thank you, Mr. Arrow. But it's no use, Bill won't go back. I've tried to get him to, but he says he can't go back on the boys." "Well, I just thought I'd

tell you, because I feel sorry for you, and the strike is lost anyway."

Meanwhile, Catherine, who had come back unnoticed by the others and had overheard the latter part of this interview, broke in indignantly, "Yes, you feel sorry for everybody, you do. You've been around to five families already this morning telling them the same story. *We're* not losing this strike. *You're* losing yourself, that's what's the matter with you. Get out of here and stop coming around preaching to us." As the foreman walked off with a careless aside, "That's just like women," Catherine turned to her friend, "You don't want Bill to be a scab, do you?" "Well, just because the other men are fools, Bill doesn't have to be one, too," was the defiant reply. Catherine picked up the can of food for which she had returned and went out again. When Bob appeared shortly after, asking with anxious concern, "How's the baby today?" his wife took the opportunity to repeat to him what the foreman had said, urging, "*Please* go back, Bob, he'll give you union wages, and the strike is lost anyway." But Bob shook his head slowly, "No, it wouldn't be good. If I go back, then another will go, and another, and the whole thing will bust up. We've got to stick together."

The curtain was drawn here to denote an interval of three weeks and opened again upon the organizer and strike chairman standing outside the tent in attitudes of dejection. Paul began, "Bill's baby died this week, and Bill's gone back to work. I don't blame him. He's had an awful time with his wife begging him to go back, and now the baby dying; but he feels so bad about it he won't come near any of the fellows." Marshall agreed and went on, "You know I feel pretty responsible for the state you

fellows are in. I came here and got you into this strike and I think perhaps you ought to have gone back when—" But Paul interrupted with a flash of his old spirit, "No, I know what you're going to say—we ought to go back without the Union—but I don't think so. If we stick it out they'll have to give in. Why I found a bulletin sent out by the Union the other day, telling how several mines had signed up already. The Company must have got hold of those bulletins and stopped them from coming through to us."

Here one or two other miners wandered in and Leo drew Adam to one side to suggest, "Say, do you want to help me beat up that C. and I. guy?" "The little fellow that got you arrested? Sure, I *hate* him." As they started to leave, the organizer called after them anxiously, "Where are you fellows off to?" "Just down to the village," was the reply, but the organizer was unsatisfied. "Those guys are going to get into trouble," he told the local leader as they returned to the discussion of what they ought to do. A pistol shot confirmed his suspicions. Men and women rushed in startled by the shot. "What's that—is someone hunting?" "No, that's no rifle shot, that's a revolver and it comes from the village, too." In a moment Adam appeared half carrying Leo who was nursing a wounded arm. Adam told the story of their attempt to beat up the hated spy and of Leo's being shot by him. The two leaders were reproachful, but sympathetic and advised their hiding in the woods to escape the police. Catherine tied up the wounded arm, gave them a loaf of bread and hurried them off saying to the rest, "Now let's all sit down and act as if nothing had happened. The police'll be around soon. I'll make you all a cup of coffee."

Then came the spy himself with his revolver and his sheriff's badge, looking for his assailants. Paul protested innocence. "You know very well I wouldn't send anybody to beat you up. Why do you come looking around here?" But Ben insisted on searching the tent. "There's blood on the grass there, and I know I shot the fellow." Catherine jeered at his swollen eye. "Who blacked your eye for you?" He knocked her roughly from the bench on which she sat as he searched behind it. With threats that he would "get those fellows yet," he left. The organizer reverted to his original argument, "Now here's another thing gone wrong. The boys are all breaking out. It would be better to go back before things get worse." And now Paul began to waver. "Well, I'll tell you what I'll do. I'll put it up to the boys at the meeting tonight and see what they say."

At this crisis, the foreman appeared asking for the strike leaders and announced, "The bosses want to see your committee at the office tomorrow morning at eight o'clock. They have a new proposition to make to you." Paul answered with dignity that they would be on hand. Then as the foreman withdrew he turned triumphantly to the organizer, "Now put that in your pipe and smoke it! I'll have something *different* to put up to the boys at the meeting tonight. We'll draw up an agreement to give to the bosses to sign tomorrow morning. Then to his wife, "Say, Jane, have I got a clean collar to wear?" "No, but I'll iron you out a shirt." She set to work at once as the curtain fell on the sudden change to renewed hope and anticipation.

The last act found Ben and Leo, now in the parts of the owners of the Wolfe Creek Coal Co., in their office with

the mine foreman, awaiting the arrival of the strikers' representatives. One owner began by commenting on a letter he held in his hand: "Here's this letter from the American Radiator Co., ordering ten thousand tons of coal if we can deliver it in two weeks' time. We can't afford to lose that order and we can't get it out the way things are now. How much coal are you getting out a day now, Arrow?" The foreman answered, "Less than fifty tons last week. These new men aren't miners, anyway. Most of them have never seen a mine before." "Well," went on the owner, "we've got to come to some agreement with these strikers, even if we do have to recognize their Union. It'll have to come some day; the other mines are signing up, and if we can't get the coal out, they will get this order." The second owner was reluctant, however, to make any concessions to "that bunch of anarchists." He walked to the window gloomily to watch and comment on the crowd gathering outside.

A knock at the door announced the strike leaders spick and span in their clean shirts and with their hair neatly brushed. All was dignified politeness as they took their seats around the table with the coal owners and began to discuss the union demands point by point. The owners conceded the union wage scale and the eight hour day. Finally, they agreed also to the miners' right to join the United Mine Workers of America. The less conciliatory operator raised a protest at this last. "What do you want to join that crowd of politicians for? They don't care anything about the individual miner." But the strikers' representatives rose at once saying they were there representing the United Mine Workers of America and could

talk only on those terms. The first operator persuaded his colleague to grant that point and negotiations went on. The right to have a check-weighman at the mine, a pit committee to handle grievances, abolition of company paid detectives, right to hold union meetings on company property were discussed and accepted, one by one, but when it came to the check off system of collecting union dues the operators balked. "No, we won't stand for that." "Why not? You take our rent and our bill at the company store out of our wages, why can't you do the same with our union dues?" "It would not be fair to the men who don't belong to the Union." "Well, we don't want any men in the mine who don't belong to the Union." "We are not going to discharge the men who have stood by us in this strike." "Let them join the Union then! They'll all have the benefit of the check-weighman we pay for and all the other things we've fought for and it isn't fair for them not to pay their share. And there's another thing, too. We want to know if every striker is going to get his place back?" "All except those who have been in any violence. We are not going to take back any thugs." "Well, we're not going back on the fellows who have stood by us. If anybody has been in any violence, they'll have to serve their sentence out all right, but then they must get their jobs back."

As the operators stood firm on these points, Paul agreed to put the two matters in question to the men outside and get their vote on it. Shouts from outside indicating approval or disapproval, gave a lively sense of the mass voting going on while the two operators watched through the window at the back of the stage. One of them continued to urge compromises in order to get the mine run-

ning at any cost. "If we do have to take back those agitators, we can get rid of them later on some excuse." The strike leaders returned, announcing, "We've got good news for you, Mr. McDavitt. The men will agree to a compromise. We will give up the check off and agree to your taking in non-union men if you will take back all the strikers first. So long as all the union men get their jobs back, you can hire non-union men, too, if you have jobs enough." On this basis the agreement was signed with hand shaking and politeness all around. Paul went to the door waving the hard won document over his head, as he called, "Men, the agreement is signed, the strike is over!" Shouts and cheers from the waiting crowd outside brought the play to a triumphant close.

Samples follow of the many spontaneous stories about miners written at various times while the play was developing.

THE MINE

by Catherine

Down the dark tunnel came a train of empty trams.

They turned off the main road, here some horses came to haul them to the stalls.

All of a sudden a man shouted "A cave-in, run to the shaft" but they could not move. It was like a prison cell.

It grew stuffer and stuffer. Soon they would not be able to breathe.

Courage came into the hearts of some.

They could hear the tap of the pick axes.

Tap, Tap, Tap, Tap.

The next morning they were bringing the men out.

They were not hurt, but were unconscious.

A CARELESS MAN

by Polly

Down, shot the cage.

Down through the shaftway.

Down at the bottom the men got off and with their lamps and picks, they went to their working places.

Way down the path a tram was coming. The tram had come from a miner. The miner had been digging. He hung his lamp above where he was working. He had laid the dynamite in the hole, and was making a rest to put the fuse on.—WHEN suddenly his pick hit the lamp. Clash—bang—it fell on the dynamite. There was an explosion. The gas lit up at the far end. The roof fell in. The man was half buried in the coal, the rescuers came, but they were overcome by the after-damp. The next day the miners came, and found them all. Just five lifeless bodies lying near each other.

A STRIKE

by Catherine

(Outline of the last half of the tent scene in the play.)

Everybody was gloomy.

Men had gone back.

Children had died.

Some felt they could stick it out.

Two men went down to the village.

Half an hour later the report of a gun came from the direction of the village.

Ten minutes later the two men came back.

One was half carrying the other.

A STRIKE

by Polly

The miners came striding across the fields. With them, they carried some food.

They lived in tents, or piles of wood. Some wives were weeping, and begging their husbands to go back. Children were crying everywhere. To cover them they had old rugs. The children were all crowded together, all dressed in sacks.

and so passed the winter.

Then. . . .

at last, the boss gave in.

A LONELY MINER

by Polly

The sun shines through the miner's window,

He awakes,

He gets up,

and gets dressed.

Then to work.

He walks towards the pit.

The sun is shining brightly.

The air is cold and crisp.

He enters the cage

with the others, to go down

to the damp

dark mine.

THE EXPLOSION

by Marshall

Once upon a time a man was working in his stall. His stall was the furthest away from the shaft and in case of an accident it would be hard to escape.

Boom!! Pow!! Crash!! Shouts of panic rose from the mine.

A terrible explosion of gas had taken place. The man was trapped behind the solid wall of rock.

Two days later the rescue party were still working desperately. The man was on the verge of death.

The dreaded after-damp had set in upon him. All the water he had to drink was that foul liquid that dripped

from the roof. He was chilled to the bone in that dark and dismal place, but he could hear the rescue men working in terrible haste to get to him. The sound of the picks seemed weird, as if laughing at him.

He closed his eyes as he knew that he was going to die, when a great shout came faintly to his ears and he opened his eyes to see a faint glimmer of light and a man crawling through the hole. Then he knew no more until he was at the top of the shaft with a doctor working over him.

LEFT IN THE MINE

by Ellen

The noise of picks was heard in the stalls of the mine. It was 1.30 P. M., most of the miners were at work trying to fill their cars before 2 o'clock. Some were a little behind and were working without care.

Some were ahead and loafing, leaning against the props.

Soon the gong was heard which meant 2 o'clock. All the men were to go out. The men who were loafing had not finished yet for their car was not yet filled. They sent up as much coal as they could. Then they had to wait until their car came back. They were all tired and while waiting they leaned against the props. Some were split a little. One man was fooling and raised his pick and hit the ceiling. It gave a hollow sound, but the man thought it would not hurt. The car came down and they went up. Two men were left to do two more hours work. They worked hard and did not fool. They were not told that when you hit the roof it made a hollow sound. But they saw that the prop was bad and went to fix it. They had hardly touched the prop when a big piece of coal fell and the water rushed forth. The power of the water knocked down one of the men and a large piece of coal fell upon him and killed him right away. The other man ran for the heading, but he was not quick enough for the ceiling fell in and he was killed.

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